

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Jeff EDER

Serial No.: 10/645,099

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For: AN AUTOMATED METHOD OF AND SYSTEM FOR IDENTIFYING, MEASURING AND  
ENHANCING CATEGORIES OF VALUE FOR A VALUE CHAIN

Group Art Unit: 3692

Examiner: Clement Graham

**Brief on Appeal**

Honorable Commissioner of Patents and Trademarks

Washington, D.C. 20321

Sir or Madam:

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**Real party in interest**

Asset Reliance, Inc. (dba Asset Trust, Inc.)

**Related appeals**

An appeal for U.S. Patent Application 09/761,670 filed January 18, 2001 may be affected or have a bearing on this appeal. An appeal for U.S. Patent Application 09/761,671 filed January 18, 2001 may be affected or have a bearing on this appeal. An Appeal for U.S. Patent Application 09/688,983 filed on October 17, 2000 may be affected by or have a bearing on this appeal. An Appeal for U.S. Patent Application 09/764,068 filed on January 19, 2001 may be affected by or have a bearing on this appeal. An Appeal for U.S. Patent Application 09/940,450 filed on August 29, 2001 may be affected by or have a bearing on this appeal. An appeal for U.S. Patent Application 10/282,113 filed October 29, 2002 may be affected or have a bearing on this appeal. An appeal for U.S. Patent Application 10/746,673 filed December 24, 2003 may be affected or have a bearing on this appeal.

**Status of Claims**

Claims 25 – 40 and 49 - 61 are pending and are the subject of this appeal. No other claims are pending. Claims 1 – 24 and 41 - 48 are cancelled without prejudice.

**Status of Amendments**

An Amendment/Reply was submitted on May 25, 2007.

## Summary of Claimed Subject Matter

One embodiment of an automated method of and system for identifying, measuring and enhancing categories of value for a value chain is best depicted in Figure 1 – 10 of the specification. Figure 1 gives an overview of the major processing steps which include preparing data for use in processing, analyzing the data using independent components of software, evaluating market sentiment, generating reports and generating value improvements.

**Independent Claim 25** - A first embodiment of the system for identifying, measuring and enhancing categories of value for a value chain is exemplified in independent claim 25 where a method integrates data from organization transaction databases, uses part of the data to develop a model that identifies a net contribution of one or more elements of value to an organization share price by a category of value and create tools for organization financial management including: category of value models, component of value models, market value models, network models, optimization models, segmentation models, simulation models, value chain models, management reports, lists of changes that will optimize one or more aspects of organization financial performance and a system for automated trading of an organization equity security based on a market sentiment value.

The acquisition of data begins by defining the enterprise using the system settings table as described in FIG. 5A reference number 202 and line 16, page 27; though line 2, page 29. The metadata mapping and conversion information that will be used to guide the extraction of data from each database is then established as described in FIG. 5A reference numbers 203 and line 4, page 29 through line 9, page 30 of the specification. After the metadata mapping and conversion information is established for each database, data from each database are extracted converted and stored in the application database for use in analysis. The extraction, conversion and storage of data from the basic financial system database in accordance with the established metadata mapping specification is described in FIG 5A, reference numbers 207, 208, 209 and 211 and line 17, page 30 through line 32, page 31 of the specification. The extraction, conversion and storage of data from operation management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 221, 222, 209 and 211 and line 3, page 32 through line 32, page 32 of the specification. The extraction, conversion and storage of data from a human resource management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 225, 226, 209 and 211 and line 5, page 33 through line 32, page 33 of the specification. The extraction, conversion and storage of data from external databases in accordance with the established metadata mapping specification is described in FIG 5C, reference numbers 241, 242, 209 and 211 and line 7, page 34 through line 33, page 34 of the specification. The extraction, conversion and storage of data from an advanced finance system in accordance with the established metadata mapping specification is described in FIG 5C, reference numbers 245, 246, 209 and 211 and line 7, page 35 through line 33, page 35 of the specification. The extraction, conversion and storage of data from soft asset management systems in accordance with the established metadata mapping specification is described in FIG 5D, reference numbers 261, 262, 209 and 211 and line 7, page 36 through line 3, page 37 of the specification. The extraction, conversion and storage of data from the internet in accordance with the established metadata mapping specification is described in FIG 5D, reference numbers 266, 267, 268 and 269 and line 19, page 37 through line 31, page 38 of the specification. Internet data are obtained after the user (20) establishes keywords as described in FIG. 5D, reference number 265 and line 10, page 37 and line 18, page 37 of the specification. Text data and geospatial measures are extracted and stored in the integrated database as described in FIG 5D, reference numbers 268, 269 and 271, FIG. 5E, reference numbers 277, 278, 279, 280, 281 and 282 and line 32, page 38 through line 33, page 41 of the specification. The stored data are then processed to

identify and locate missing data, as described in FIG. 5F reference number 291 and 292 and line 1, page 42 through line 17, page 42 of the specification.

After data are aggregated, converted and stored as described in the preceding paragraphs, item performance indicators and composite variables are generated using the procedure described in FIG. 5F, reference numbers 293, 294, 295 and 296 and line 18, page 42 through line 23, page 43 of the specification.

The item performance indicators and composite variables are then used to develop models of the current operation category of value by component of value (revenue, expense or capital change), the real option category of value, and the market sentiment category of value. In the first phase of this processing, the item performance indicators and composite variables created in the prior stage of processing are used to develop a summary of element of value contribution to each of the components of current operation value (revenue, expense or capital change) for each enterprise. As part of this processing the causal item performance indicators and composite variables (collectively, causal factors) are identified and are used exclusively in building the vectors that summarize the performance of each element of value. This phase of processing is described in FIG. 6A reference numbers 301 - 310, FIG. 6B reference numbers 321 and line 1, page 44 through line 8, page 51 of the specification.

In the second phase of the organization share price by category of value model development processing, an estimate of the similarity of each real option to the current business operation is developed by comparing the element of value impact profile of the current operation to the expected profile of each real option. The estimate is then used to develop a cost of capital multiplier. The closer the element of value profile of the option is to the element of value profile of current operation, the closer the multiplier is to 1. The estimate may be made by the user or by pattern matching algorithms. The estimate is then combined with the enterprise cost of capital (determined in a manner that is well known) to develop a discount rate for each real option. The discount rate is combined with previously stored information regarding each real option in order to calculate the value of the real options. This phase of processing is described in FIG. 6B reference numbers 326, 327 and 328 and line 9, page 51 through line 30, page 52 of the specification.

In the third and final phase of the organization share price by category of value model development processing, a model of the contribution of elements of value to enterprise market sentiment value is developed. The first phase in this part of the process involves calculating the value of market sentiment by combining the results of prior analyses in accordance with the equation shown in Table 35 on page 61. A series of predictive models are then used to identify the relationship between the item performance indicators and composite variables identified in the first phase of this processing with the value of market sentiment. The relationships from the best fit model are then used to calculate the contribution of each element of value to a market sentiment value in a manner similar to that used for identifying element of value contribution to the components of value. This portion of the processing is described in FIG. 7 reference numbers 404, 405, 410, 411, 413, 414 and 415 and line 1, page 61 through line 35, page 65 of the specification.

The development and use of category of value models is described in FIG. 6A reference numbers 301 - 310, FIG. 6B reference numbers 321, 326 - 328, 330 and 331, FIG. 6C reference numbers 341 - 342, 345 - 350 and line 1, page 44 through line 15, page 65. The development and use of mode for a real option category of value is described in FIG. 6B reference numbers 326, 327 and 328 and line 9, page 51 through line 30, page 52 of the specification. The development and use of a model for a current operation category of value is described in FIG. 6A reference numbers 301 - 310, FIG. 6B reference numbers 321, 326 - 328, 330 and 331, FIG. 6C



reference numbers 341 – 342, 345 - 350 and line 1, page 44 through line 15, page 65.

The development and use of a market value model is described in FIG. 6A reference numbers 301 - 310, FIG. 6B reference numbers 321 and line 1, page 44 through line 8, page 51 of the specification.

The evolution of network models for revenue is described in a variety of places including, FIG. 8A reference numbers 501 – 504, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 5, page 44 through line 30, page 49 in the specification of cross referenced patent application 09/761,670. The evolution of network models for expense is described in FIG. 8B reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550, FIG. 9 and in line 31, page 49 through line 17, page 50 in the specification of cross referenced patent application 09/761,670. 09/761,670 also describes the development of network models for cash flow/market value and capital change.

The development and use of optimization models is described in a variety of places including FIG. 15 reference numbers 854, 855, 856 and 857 and line 9, page 73 through line 24, page 75 of the specification in cross referenced application 09/761,671.

The development and use of segmentation models is described in a variety of places including FIG 6A, reference number 304 and line 10, page 45 through line 18, page 45 of the specification.

The development and use of simulation models is described in a variety of places including FIG. 15 reference numbers 854, 855, 856 and 857 and line 9, page 73 through line 24, page 75 of the specification in cross referenced application 09/761,671.

The development and use of value chain models is described in FIG. 1 – 10 and line 10, page 2 through line 8, page 74 of the specification.

The development and use of management reports is described in a variety of places including FIG 8, reference numbers 505 and 705, FIG. 9 reference numbers 610 and 708, line 8, page 66 through line 11, page 69 and line 30, page 72 through line 24, page 73 of the specification.

The development use of a list of changes that will optimize one or more aspects of organization financial performance is described in a variety of places including FIG. 9 reference numbers 605 and 707 and line 12, page 72 through line 14, page 73 of the specification.

The development and use of a system for automated trading of an organization equity security based on a market sentiment value is described in FIG. 8 reference numbers 511, 512 and 706 and line 1, page 70 through line 17, page 70 of the specification.

#### Dependent claims

The limitations and activities associated with dependent claim 26 are described in a number of places including table 3, page 10 and line 20, page 26 through line 26, page 26 of the specification.

The limitations and activities associated with dependent claim 27 are described in FIG. 6A reference numbers 301 - 310, FIG. 6B reference numbers 321 and line 1, page 44 through line 8, page 51 of the specification.

The limitations and activities associated with dependent claim 28 are described in a number of places including table 3, page 10 and line 20, page 26 through line 26, page 26 of the specification. Optimization of components of value is described in FIG. 15 reference numbers 854, 855, 856 and 857 and line 9, page 73 through line 24, page 75 of the specification in cross referenced application 09/761,671. The identification of value enhancing changes by element of value is described in FIG. 9 reference number 604 and line 1, page 71 through line 11, page 72 of the specification.

The limitations and activities associated with dependent claim 29 are described in a number of places including line 10, page 58, through line 33, page 58 of the specification.

The limitations and activities associated with dependent claim 30 are described in a number of places. For example, identifying and analyzing value driver change impact is described in FIG. 9 reference numbers 603, 604, 605 and 610 and line 30, page 70 through line 15, page 73 of the specification. Organization market and share price reporting is described in FIG 8, reference numbers 504 and 505 and line 22, page 66 through line 11, page 69 of the specification. The identification of a price point is described FIG. 8 reference numbers 510, 511 and 512 and line 25, page 69 through line 17, page 70 of the specification.

The limitations and activities associated with dependent claim 31 are described in a number of places including FIG. 1, reference numbers 5, 10, 15, 25, 30 and 40, line 18, page 21 through line through line 20, page 21 and line 20, page 26 through line 26, page 26 of the specification.

The limitations and activities associated with dependent claim 32 are described in a number of places including line 23 of page 18 in the specification for cross referenced application 09/761,671.

**Independent Claim 33** - A second embodiment of the system for identifying, measuring and enhancing categories of value for a value chain is exemplified in independent claim 33 where an article of manufacture instructs a processor in a computer system to: integrate data from organization transaction databases in accordance with a common schema, analyze the data to identify data that are associated with one or more aspects of financial performance, and generate cluster models that identify a plurality of segments for each category of value, component of value, element of value, market value factors and combinations thereof

The acquisition of data begins by defining the enterprise using the system settings table as described in FIG. 5A reference number 202 and line 16, page 27; though line 2, page 29. The enterprise definitions define the different segments for each category of value. The metadata mapping and conversion information that will be used to guide the extraction of data from each database is then established as described in FIG. 5A reference numbers 203 and line 4, page 29 through line 9, page 30 of the specification. After the metadata mapping and conversion information is established for each database, data from each database are extracted converted and stored in the application database for use in analysis. The extraction, conversion and storage of data from the basic financial system database in accordance with the established metadata mapping specification is described in FIG 5A, reference numbers 207, 208, 209 and 211 and line 17, page 30 through line 32, page 31 of the specification. The extraction, conversion and storage of data from operation management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 221, 222, 209 and 211 and line 3, page 32 through line 32, page 32 of the specification. The extraction, conversion and storage of data from a human resource management system in accordance with the established metadata mapping

specification is described in FIG 5B, reference numbers 225, 226, 209 and 211 and line 5, page 33 through line 32, page 33 of the specification. The extraction, conversion and storage of data from external databases in accordance with the established metadata mapping specification is described in FIG 5C, reference numbers 241, 242, 209 and 211 and line 7, page 34 through line 33, page 34 of the specification. The extraction, conversion and storage of data from an advanced finance system in accordance with the established metadata mapping specification is described in FIG 5C, reference numbers 245, 246, 209 and 211 and line 7, page 35 through line 33, page 35 of the specification. The extraction, conversion and storage of data from soft asset management systems in accordance with the established metadata mapping specification is described in FIG 5D, reference numbers 261, 262, 209 and 211 and line 7, page 36 through line 3, page 37 of the specification. The extraction, conversion and storage of data from the internet in accordance with the established metadata mapping specification is described in FIG 5D, reference numbers 266, 267, 268 and 269 and line 19, page 37 through line 31, page 38 of the specification. Internet data are obtained after the user (20) establishes keywords as described in FIG. 5D, reference number 265 and line 10, page 37 and line 18, page 37 of the specification. Text data and geospatial measures are extracted and stored in the integrated database as described in FIG 5D, reference numbers 268, 269 and 271, FIG. 5E, reference numbers 277, 278, 279, 280, 281 and 282 and line 32, page 38 through line 33, page 41 of the specification. The stored data are then processed to identify and locate missing data, as described in FIG. 5F reference number 291 and 292 and line 1, page 42 through line 17, page 42 of the specification.

Clustering for the components of value (revenue, expense, capital change) involves the use of unsupervised “Kohonen” neural network, K-nearest neighbor, Expectation Maximization (EM) and/or the segmental K-means clustering algorithms to identify clusters for possible use in a separate analysis. For example, the clustering analysis for revenue component of value identifies different customer groups (i.e. regular customers, occasional customers, service only customers, etc.). This phase of the processing is described in FIG. 6A reference numbers 304 and in line 10, page 45 through line 8, page 46 of the specification.

Clustering for elements of value involves the use of an unsupervised Kohonen network to identify the number of distinct sub-elements of value that are present within an element of value. These distinct sub-elements of value may be used for separate analysis during model development. This phase of processing is described in a number of places including FIG. 6, reference number 309 and line 6, page 37 through line 6, page 40 of cross referenced application 09/761,670.

Clustering for the factor or factors that best define market value involves the use of temporal clustering to identify distinct regimes in the data. These distinct regimes may be used for separate analysis during model development. This phase of processing is described in a number of places including FIG. 6B, reference number 327 and line 5, page 50 through line 15, page 51 of cross referenced application 10/441,385.

#### Dependent claims

The limitations and activities associated with dependent claim 34 are described in a number of places including FIG. 6, reference number 309 and line 6, page 37 through line 6, page 40 of cross referenced application 09/761,670.

The limitations and activities associated with dependent claim 35 are described in a number of places including FIG. 6A reference numbers 301 - 310, FIG. 6B reference numbers 321, 326 – 328, 330 and 331, FIG. 6C reference numbers 341 – 342, 345 - 350 and line 1, page 44 through line 15, page 65 of the specification.

The limitations and activities associated with dependent claim 36 are described in a number of places including line 10, page 12 of the specification.

The limitations and activities associated with dependent claim 37 are described in a number of places including FIG. 8A, reference number 525 and line 6, page 47, through line 6, page 49 of the specification of cross referenced application 09/761,670.

The limitations and activities associated with dependent claim 38 are described in a number of places including FIG. 5F, reference number 294, line 1, page 43 through line 12, page 43 of the specification, FIG. 6A, reference number 307, line 3, page 49 through line 6, page 49 of the specification, FIG. 6C reference number 347 and line 21, page 57 through line 28, page 58 of the specification.

The limitations and activities associated with dependent claim 39 are described in a number of places including table 3, page 10 and line 20, page 26 through line 26, page 26 of the specification.

The limitations and activities associated with dependent claim 40 are described in a number of places including in FIG. 6A reference numbers 304 and in line 10, page 45 through line 8, page 46 of the specification.

**Independent Claim 49** - A third embodiment of the system for identifying, measuring and enhancing categories of value for a value chain is exemplified in independent claim 49 where an article of manufacture instructs a processor to integrate data from two or more systems in an automated fashion in accordance with a common model or schema that is defined by a common metadata standard and process the data using two or more independent components of application software.

The integration of data begins by defining the enterprise using the system settings table as described in FIG. 5A reference number 202 and line 16, page 27; though line 2, page 29. The enterprise definitions define the different segments for each category of value. The metadata mapping and conversion information that will be used to guide the extraction of data from each database is then established as described in FIG. 5A reference numbers 203 and line 4, page 29 through line 9, page 30 of the specification. After the metadata mapping and conversion information is established for each database, data from each database are extracted converted and stored in the application database for use in analysis. The extraction, conversion and storage of data from the basic financial system database in accordance with the established metadata mapping specification is described in FIG 5A, reference numbers 207, 208, 209 and 211 and line 17, page 30 through line 32, page 31 of the specification. The extraction, conversion and storage of data from operation management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 221, 222, 209 and 211 and line 3, page 32 through line 32, page 32 of the specification. The extraction, conversion and storage of data from a human resource management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 225, 226, 209 and 211 and line 5, page 33 through line 32, page 33 of the specification. The extraction, conversion and storage of data from external databases in accordance with the established metadata mapping specification is described in FIG 5C, reference numbers 241, 242, 209 and 211 and line 7, page 34 through line 33, page 34 of the specification. The extraction, conversion and storage of data from an advanced finance system in accordance with the established metadata mapping specification is described in

FIG 5C, reference numbers 245, 246, 209 and 211 and line 7, page 35 through line 33, page 35 of the specification. The extraction, conversion and storage of data from soft asset management systems in accordance with the established metadata mapping specification is described in FIG 5D, reference numbers 261, 262, 209 and 211 and line 7, page 36 through line 3, page 37 of the specification. The extraction, conversion and storage of data from the internet in accordance with the established metadata mapping specification is described in FIG 5D, reference numbers 266, 267, 268 and 269 and line 19, page 37 through line 31, page 38 of the specification. Internet data are obtained after the user (20) establishes keywords as described in FIG. 5D, reference number 265 and line 10, page 37 and line 18, page 37 of the specification. Text data and geospatial measures are extracted and stored in the integrated database as described in FIG 5D, reference numbers 268, 269 and 271, FIG. 5E, reference numbers 277, 278, 279, 280, 281 and 282 and line 32, page 38 through line 33, page 41 of the specification. The stored data are then processed to identify and locate missing data, as described in FIG. 5F reference number 291 and 292 and line 1, page 42 through line 17, page 42 of the specification.

After data integration is complete, the data are processed using a series of independent software components as described in a number of places including FIG. 6A reference numbers 301 - 310, FIG. 6B reference numbers 321, 326 – 328, 330 and 331, FIG. 6C reference numbers 341 – 342, 345 – 350 and line 1, page 44, through line 18, page 65 of the specification.

#### Dependent claims

The limitations and activities associated with dependent claim 50 are described in a number of places including FIG. 5A, FIG. 5B and FIG. 5C that show reference numbers 209 and 211 being combined with a number of different bots.

The limitations and activities associated with dependent claim 51 are described in a number of places including line 32, page 27 of the specification.

The limitations and activities associated with dependent claim 52 are described in a number of places including FIG 5A, reference numbers 207, 208, 209 and 211, FIG 5B, reference numbers 221, 222, 225, 226, 209 and 211, FIG 5D reference numbers 265, 266 and 267, FIG. 5F reference number 294, FIG. 6A, reference numbers 304, 308 and 309, FIG. 6C, reference numbers 341, 345 and 347, line 17, page 30 through line 32, page 33, line 10, page 37 through line 20, page 38, line 1, page 43 through line 8, page 43, line 10, page 45 through line 18, page 46, line 8, page 49 through line 31, page 50, and line 26, page 54 through line 30, page 59 of the specification.

The limitations and activities associated with dependent claim 53 are described in a number of places including: FIG. 5D reference numbers 265 and 266, FIG 6B reference numbers 326 and 327, FIG. 6C reference numbers 347 and 348, FIG. 8 reference numbers 510 and 511, FIG. 9 reference numbers 603, 604, 605, 610 and 611, line 10, page 37 through line 10, page 38, line 15, page 51 through line 30, page 52, line 21, page 57 through line 28, page 59, line 26, page 69 through line 16, page 70, and line 31, page 70 through line 23, page 73 of the specification.

The limitations and activities associated with dependent claim 54 are described in a number of places including FIG. 1, reference numbers 5, 10, 15, 25, 30 and 40, line 18, page 21 through line through line 20, page 21 and line 20, page 26 through line 26, page 26 of the specification.

The limitations and activities associated with dependent claim 55 are described in a number of places including FIG 5A, reference numbers 207, 208, 209 and 211 and line 17, page 30 through line 32, page 31 of the specification. The extraction, conversion and storage of data from

operation management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 221, 222, 209 and 211 and line 3, page 32 through line 32, page 32 of the specification. The extraction, conversion and storage of data from a human resource management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 225, 226, 209 and 211 and line 5, page 33 through line 32, page 33 of the specification. There are additional places in the specification where the use of metadata mapping is described.

The limitations and activities associated with dependent claim 56 are described in a number of places including line 20 and 21 on page 45 of the specification.

**Independent Claim 57** - A fourth embodiment of the system for identifying, measuring and enhancing categories of value for a value chain is exemplified in independent claim 57 where an article of manufacture instructs a processor to integrate data from two or more systems in an automated fashion in accordance with a common metadata standard.

The integration of data begins by defining the enterprise using the system settings table as described in FIG. 5A reference number 202 and line 16, page 27; though line 2, page 29. The enterprise definitions define the different segments for each category of value. The metadata mapping and conversion information that will be used to guide the extraction of data from each database is then established as described in FIG. 5A reference numbers 203 and line 4, page 29 through line 9, page 30 of the specification. After the metadata mapping and conversion information is established for each database, data from each database are extracted converted and stored in the application database for use in analysis. The extraction, conversion and storage of data from the basic financial system database in accordance with the established metadata mapping specification is described in FIG 5A, reference numbers 207, 208, 209 and 211 and line 17, page 30 through line 32, page 31 of the specification. The extraction, conversion and storage of data from operation management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 221, 222, 209 and 211 and line 3, page 32 through line 32, page 32 of the specification. The extraction, conversion and storage of data from a human resource management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 225, 226, 209 and 211 and line 5, page 33 through line 32, page 33 of the specification. The extraction, conversion and storage of data from external databases in accordance with the established metadata mapping specification is described in FIG 5C, reference numbers 241, 242, 209 and 211 and line 7, page 34 through line 33, page 34 of the specification. The extraction, conversion and storage of data from an advanced finance system in accordance with the established metadata mapping specification is described in FIG 5C, reference numbers 245, 246, 209 and 211 and line 7, page 35 through line 33, page 35 of the specification. The extraction, conversion and storage of data from soft asset management systems in accordance with the established metadata mapping specification is described in FIG 5D, reference numbers 261, 262, 209 and 211 and line 7, page 36 through line 3, page 37 of the specification. The extraction, conversion and storage of data from the internet in accordance with the established metadata mapping specification is described in FIG 5D, reference numbers 266, 267, 268 and 269 and line 19, page 37 through line 31, page 38 of the specification. Internet data are obtained after the user (20) establishes keywords as described in FIG. 5D, reference number 265 and line 10, page 37 and line 18, page 37 of the specification. Text data and geospatial measures are extracted and stored in the integrated database as described in FIG 5D, reference numbers 268, 269 and 271, FIG. 5E, reference numbers 277, 278, 279, 280, 281 and 282 and line 32, page 38 through line 33, page 41 of the specification. The stored data are then processed to identify and locate missing data, as described in FIG. 5F reference number 291 and 292 and line 1, page 42 through line 17, page 42 of the specification.

### Dependent claims

The limitations and activities associated with dependent claim 58 are described in a number of places including FIG 5A, reference numbers 207, 208, 209 and 211 and line 17, page 30 through line 32, page 31 of the specification. The extraction, conversion and storage of data from operation management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 221, 222, 209 and 211 and line 3, page 32 through line 32, page 32 of the specification. The extraction, conversion and storage of data from a human resource management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 225, 226, 209 and 211 and line 5, page 33 through line 32, page 33 of the specification. There are additional places in the specification where the use of metadata mapping is described.

The limitations and activities associated with dependent claim 59 are described in a number of places including FIG. 1, reference numbers 5, 10, 15, 25, 30 and 40, line 18, page 21 through line through line 20, page 21 and line 20, page 26 through line 26, page 26 of the specification.

The limitations and activities associated with dependent claim 60 are described in a number of places including FIG 5D reference number 266 and line 18, page 37 through line 10 page 38 of the specification.

The limitations and activities associated with dependent claim 61 are described in a number of places including FIG 5D reference number 265 and line 10, page 37 through line 17, page 37 of the specification.

## **Grounds of rejection to be reviewed on appeal**

**Issue 1** - Whether the invention described in claim 25, claim 33 and/or claim 57 represents patentable subject matter under 35 USC 101?

**Issue 2** - Whether claim 25, claim 26, claim 27, claim 28, claim 29, claim 30, claim 31, claim 32 and/or claim 33 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?

**Issue 3** - Whether claim 34, claim 35, claim 36, claim 37, claim 38, claim 39 and/or claim 40 are patentable under 35 USC 102 over Lyons?

**Issue 4** - Whether claim 49, claim 50, claim 51, claim 52, claim 53, claim 54, claim 55 and/or claim 56 are patentable under 35 USC 102 over Lyons?

**Issue 5** - Whether claim 57, claim 58, claim 59, claim 60 and/or claim 61 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?

**Issue 6** - Whether claim 25, claim 33 and/or claim 57 are indefinite under 35 USC 112, second paragraph?



## The Argument

### Grouping of Claims

For each ground of rejection which Appellant contests herein which applies to more than one claim, such additional claims, to the extent separately identified and argued below, do not stand and fall together.

### Issue 1 - Whether the invention described in claim 25, claim 33 and/or claim 57 represents patentable subject matter under 35 USC 101?

Claim 25 is rejected as non-statutory for including the words “integrating data” and “identifying”. Claim 33 is rejected as non-statutory for including the words “integrating data”, “identifying” and “generating”. Claim 57 is rejected as non statutory even though it does not include any of the five words/phrases the Examiner cited as the basis for the rejection.

Claim 25, claim 33 and claim 57 represent patentable subject matter and are each patentable for at least five reasons:

1. because the Examiner has failed to establish a prima facie case of non-statutory subject matter for the rejected claims;
2. because the claimed inventions produce results that are concrete, tangible and useful;
3. because the claimed inventions transform transaction data into a different state or thing;
4. because arguments regarding the alleged non-statutory subject matter fail to comply with the requirements of the Administrative Procedures Act and are therefore moot; and
5. because the subject matter eligibility of the instant application is apparently being reviewed under a different standard than that used for the review of similar patents, an apparent violation of 35 USC 3.

As mentioned above, the first reason claim 25, claim 33 and/or claim 57 are patentable is that the arguments presented by the Examiner fail to establish a prima facie case of non-statutory subject matter for the rejected claims. As noted in Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility “the Examiner bears the initial burden ... of presenting a prima facie case of unpatentability.” In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The Appellant notes that the Examiner has made a general statement to the effect that because the claims recite terms such as “integrating data”, “evolving”, “creating”, “generating” and “identifying” they are abstract. However, the Examiner has not provided any evidence to support the fact that any of the claims taken as a whole are abstract and/or that any of the claims lack a specific utility. MPEP 2164.07 states “the examiner has the initial burden of challenging an asserted utility. Only after the examiner has provided evidence showing that one of ordinary skill in the art would reasonably doubt the asserted utility does the burden shift to the applicant to provide rebuttal evidence sufficient to convince one of ordinary skill in the art of the invention's asserted utility. In re Brana, 51 F.3d 1560, 1566, 34 USPQ2d 1436, 1441 (Fed. Cir. 1995) (citing In re Bundy, 642 F.2d 430, 433, 209 USPQ 48, 51 (CCPA 1981)). Given the complete absence of evidence to support these assertions, the Appellant respectfully submits that the Examiner has failed to establish the required prima facie cause of non-statutory subject matter for the rejected claims. This is particularly true for claim 57.

The second reason the claims are each patentable is that it is clear that - taken as a whole - the claimed inventions are: a method (claim 25), an article of manufacture (claim 33) and an article of manufacture (claim 57) that produce results that are concrete, tangible and useful. In particular,

the invention of claim 25 produces a contribution analysis of an organization share price and tools for improving shareholder value, the invention of claim 33 produces clustering models for detailed analysis of enterprise financial performance and the invention of claim 57 produces a centralized, integrated database that supports the detailed analysis of enterprise financial performance.

The third reason the claims are patentable is that the claimed inventions represent a method (claim 25), an article of manufacture (claim 33) and an article of manufacture (claim 57) for transforming transaction data into a different state or thing. As noted in the *Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility* "the Supreme Court noted that one example of a statutory "process" is where the process steps provide a transformation or reduction of an article to a different state or thing (Diehr, 450 U.S. at 183, 209 USPQ at 6). In Alappat, the Court held that "data, transformed by a machine" "to produce a smooth waveform display" "constituted a practical application of an abstract idea." State Street, 149 F.3d at 1373. In Arrhythmia, the Court held "the transformation of electrocardiograph signals" "by a machine" "constituted a practical application of an abstract idea." *Id.* Likewise, in State Street, the Court held that "the transformation of data" "by a machine" "into a final share price, constitutes a practical application of a mathematical algorithm." *Id.* Thus, while Diehr involved the transformation of a tangible object - curing synthetic rubber - the Court also regards the transformation of intangible subject matter to similarly be eligible, so long as data or signals represent some real world activity. It is the Appellant's understanding that the PTO views this "data transformation" test as an appropriate way to evaluate subject matter eligibility (see *In re Comiskey*, No. 2006- 1286).

The second and third reasons taken together make it clear that the claimed inventions pass the data transformation test and are: a method (claim 25), an article of manufacture (claim 33) and an article of manufacture (claim 57) that support practical applications with substantial, specific utility and are therefore statutory subject matter.

As stated previously, the fourth reason the claims are allowable is that the unsupported allegations used to support the claim rejections are not in compliance with the requirements of the Administrative Procedures Act and are therefore moot. In *Dickinson v. Zurko*, 119 S. Ct. 1816, 50 USPQ2d 1930 (1999), the Supreme Court held that the appropriate standard of review of U.S.P.T.O. findings of fact are the standards set forth in the Administrative Procedure Act ("APA") at 5 U.S.C. 706 (1994). The APA provides two standards for review – an arbitrary and capricious standard and a substantial evidence standard. The Supreme Court has defined substantial evidence as "substantial evidence is more than a mere scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion. . . Mere uncorroborated hearsay or rumor does not constitute substantial evidence. Consolidated, 305 U.S. at 229-30 (citations omitted)". The Appellant respectfully submits that the instant Office Action fails to provide even a scintilla of evidence to support the allegation of non-statutory subject matter it contains and that as a result it fails to meet the substantial evidence standard. The Appellant respectfully submits that the arguments presented by the Examiner also fail to pass the arbitrary and capricious test. Under the arbitrary and capricious test a reviewing court analyzes only whether a rational connection exists between the agency's fact findings and its ultimate action, (see *Hyundai Elecs. Indus. Co. v. ITC*, 899 F.2d 1204, 1209, 14 USPQ2d 1396, 1400 (Fed. Cir. 1990). The Appellant notes that rejection of claim 25, claim 33 and claim 57 also fails to pass the arbitrary and capricious test because the Examiner has not completed any discernible fact finding that can be rationally or irrationally connected to the rejection contained of these claims.

As noted previously, the fifth reason claim 25, claim 33 and claim 57 are patentable is that the subject matter eligibility of the instant application is apparently being reviewed under a different standard than that used for the review of similar patents - an apparent violation of 35 USC 3. The

are two examples of this apparent discrimination. First, as noted previously, the cited claims all pass the data transformation test which the U.S.P.T.O. has cited as an appropriate way to evaluate subject matter eligibility (see Supplemental Letter Brief from James R. Toupin re: In re Comiskey, No. 2006- 1286). Given this endorsement, it is not clear why the Examiner is attempting to use a different method to establish subject matter eligibility in an apparently discriminatory manner. Second, a review of the U.S.P.T.O. database shows that the claims in roughly 7% of issued patents (over 450,000 patents) include one or more of the terms the Examiner has objected to (see page 51, Evidence Appendix). The Appellant only makes the comparison shown above to illustrate the point that the above referenced application is not being reviewed under the same standard for subject matter eligibility that has been used for the review and allowance of other patent applications.

**Issue 2 - Whether claim 25, claim 26, claim 27, claim 28, claim 29, claim 30, claim 31 and/or claim 32 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?**

Claim 25, claim 26, claim 27, claim 28, claim 29, claim 30, claim 31 and claim 32 are rejected under §102 as being anticipated by U.S. Patent 4,989,141 (hereinafter, Lyons). The Examiner has cited the Lyons document as a reference. The Appellant respectfully traverses the rejections for anticipation in two ways. First, by noting that the rejections fail under both standards of the APA. Second, by noting that the argument used to support the claim rejections fails to establish a prima facie case of anticipation for the rejected claims. More specifically, the 27 February 2007 Office Action containing the claim rejections fails to establish a prima facie case of anticipation in as many as three separate ways for every rejected claim.

The first way in which the 27 February 2007 Office Action fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to describe every element of the rejected claims. MPEP 2131 notes that:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The second way in which the 27 February 2007 Office Action fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to provide the same level of detail that is present in the claim. MPEP 2131 notes that anticipation requires that:

"The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The third way in which the 27 February 2007 Office Action fails to establish a prima facie case of anticipation for many if not all of the claims is that the Office Action does not describe the basis in fact or technical reasoning that is required to support the allegations regarding allegedly inherent characteristics contained in the Lyons reference. MPEP 2112 notes that:

"In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

The Appellant respectfully submits that the rejection of independent claim 25 can be traversed by noting that Lyons: is missing elements contained in claim 25, fails to enable the invention detailed in claim 25, provides insufficient detail regarding elements of claim 25 and that any alleged inherency of features of claim 25 has not been explained. Elements of claim 25 not explicitly or inherently described in the Lyons document include: transaction data, organization share price and categories of value. Lyons also lacks detail regarding transaction data, organization share price and categories of value and any alleged inherency of transaction data, organization share price and categories of value has not been explained. As mentioned previously, Lyons does not enable the completion of claim 25 for a variety of reasons. One of the reasons Lyons fails to enable the completion of claim 25 is that Lyons is limited to processing financial schedule data and the data used for processing in claim 25 are not included in any known financial schedule. Furthermore, the Lyons data storage method is designed for use with spreadsheets and as a result it does not enable the storage of data in files or tables and it creates a massive redundancy in data storage that precludes its use in a non-spreadsheet application such as the one described in claim 25 (see Evidence Appendix, pages 43 - 47). As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 25 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 26 can be traversed by noting that Lyons: is missing elements contained in parent claim 25, does not enable parent claim 25, provides insufficient detail regarding elements of parent claim 25 and that any alleged inherency of features of parent claim 25 has not been explained. The rejection of dependent claim 26 can also be traversed by noting that Lyons: is missing elements contained in claim 26, does not enable all the elements of claim 26, provides insufficient detail regarding elements of claim 26 and that any alleged inherency of features of claim 26 has not been explained. Elements of claim 26 not explicitly or inherently described in the Lyons document include: alliances, brands, channels, customers, customer relationships, employees, employee relationships, intellectual property, partnerships, processes, supply chains, vendors and vendor relationships. Lyons also lacks detail regarding alliances, brands, channels, customers, customer relationships, employees, employee relationships, intellectual property, partnerships, processes, supply chains, vendors and vendor relationships and any inherency of a alliances, brands, channels, customers, customer relationships, employees, employee relationships, intellectual property, partnerships, processes, supply chains, vendors and vendor relationships has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 26 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 27 can be traversed by noting that Lyons: is missing elements contained in parent claim 25, does not enable parent claim 25, provides insufficient detail regarding elements of parent claim 25 and that any alleged inherency of features of parent claim 25 has not been explained. The rejection of dependent claim 27 can also be traversed by noting that Lyons: is missing elements contained in claim 27, does not enable all the elements of claim 27, provides insufficient detail regarding elements of claim 27 and that any alleged inherency of features of claim 27 has not been explained. Elements of claim 27 not explicitly or inherently described in the Lyons document include: performance indicators, model training, value driver identification, impact summary development, induction, categories of value and organization share price. Lyons also lacks detail regarding performance indicators, model training, value driver identification, impact summary development, induction, categories of value and organization share price and any inherency of a performance indicators, model training, value driver identification, impact summary development, induction, categories of value and organization share price has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 27 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 28 can be traversed by noting that Lyons: is missing elements contained in parent claim 25, does not enable parent claim 25, provides insufficient detail regarding elements of parent claim 25 and that any alleged inherency of features of parent claim 25 has not been explained. The rejection of dependent claim 28 can also be traversed by noting that Lyons: is missing elements contained in claim 28, does not enable all the elements of claim 28, provides insufficient detail regarding elements of claim 28 and that any alleged inherency of features of claim 28 has not been explained. Elements of claim 28 not explicitly or inherently described in the Lyons document include: alliance value, brand value, channel value, customer value, customer relationship value, employee value, employee relationship value, intellectual property value, partnership value, process value, supply chain value, vendor value and vendor relationship value. Lyons also lacks detail regarding alliance value, brand value, channel value, customer value, customer relationship value, employee value, employee relationship value, intellectual property value, partnership value, process value, supply chain value, vendor value and vendor relationship value and any inherency of a alliance value, brand value, channel value, customer value, customer relationship value, employee value, employee relationship value, intellectual property value, partnership value, process value, supply chain value, vendor value and vendor relationship value has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 28 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 29 can be traversed by noting that Lyons: is missing elements contained in parent claim 25, does not enable parent claim 25, provides insufficient detail regarding elements of parent claim 25 and that any alleged inherency of features of parent claim 25 has not been explained. The rejection of dependent claim 29 can also be traversed by noting that Lyons: is missing elements contained in claim 29, does not enable all the elements of claim 29, provides insufficient detail regarding elements of claim 29 and that any alleged inherency of features of claim 29 has not been explained. Elements of claim 29 not explicitly or inherently described in the Lyons document include: categories of value and a net contribution. Lyons also lacks detail regarding categories of value and a net contribution and any inherency of categories of value and a net contribution has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 29 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 30 can be traversed by noting that Lyons: is missing elements contained in parent claim 25, does not enable parent claim 25, provides insufficient detail regarding elements of parent claim 25 and that any alleged inherency of features of parent claim 25 has not been explained. The rejection of dependent claim 30 can also be traversed by noting that Lyons: is missing elements contained in claim 30, does not enable all the elements of claim 30, provides insufficient detail regarding elements of claim 30 and that any alleged inherency of features of claim 30 has not been explained. Elements of claim 30 not explicitly or inherently described in the Lyons document include: alliance management system databases, brand management system databases, business intelligence system databases, customer relationship management system databases, channel management system databases, estimating system databases, intellectual property management system databases, process management system databases, supply chain management system databases and vendor management system databases. Lyons also lacks detail regarding alliance management system databases, brand management system databases, business intelligence system databases, customer relationship management system databases, channel management system databases, estimating system databases, intellectual property management system databases, process management system databases, supply chain management system databases and vendor management system databases and any inherency of alliance management system databases,

brand management system databases, business intelligence system databases, customer relationship management system databases, channel management system databases, estimating system databases, intellectual property management system databases, process management system databases, supply chain management system databases and vendor management system databases has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 30 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 31 can be traversed by noting that Lyons: is missing elements contained in parent claim 25, does not enable parent claim 25, provides insufficient detail regarding elements of parent claim 25 and that any alleged inherency of features of parent claim 25 has not been explained. The rejection of dependent claim 31 can also be traversed by noting that Lyons: is missing elements contained in claim 31, does not enable all the elements of claim 31, provides insufficient detail regarding elements of claim 31 and that any alleged inherency of features of claim 31 has not been explained. Elements of claim 31 not explicitly or inherently described in the Lyons document include: business intelligence system databases, customer relationship management system databases, channel management system databases, web site system databases and the Internet. Lyons also lacks detail regarding business intelligence system databases, customer relationship management system databases, channel management system databases, web site system databases and the Internet and any inherency of business intelligence system databases, customer relationship management system databases, channel management system databases, web site system databases and the Internet has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 31 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 32 can be traversed by noting that Lyons: is missing elements contained in parent claim 25, does not enable parent claim 25, provides insufficient detail regarding elements of parent claim 25 and that any alleged inherency of features of parent claim 25 has not been explained. The rejection of dependent claim 32 can also be traversed by noting that Lyons: is missing elements contained in claim 32, does not enable all the elements of claim 32, provides insufficient detail regarding elements of claim 32 and that any alleged inherency of features of claim 32 has not been explained. Elements of claim 32 not explicitly or inherently described in the Lyons document include: transactions. Lyons also lacks detail regarding transactions and any inherency of transactions has not been explained. Lyons is limited to storing and manipulating information that appears in financial schedules (see page 44, Evidence Appendix, Lyons C2, L45 – 50). As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 32 has not been established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of anticipation for a single claim. The complete failure to identify anticipation at the claim level clearly illustrates the fact that the cited document is not even remotely similar to the claimed invention. *As noted in MPEP 2112, anticipation requires that a substantial identity be established.* . The question as to whether an invention is anticipated by a prior art reference is a factual issue not a subjective one (In re Schreiber, 128 F.3d 1473, 1477 (Fed. Cir. 1997)). It is a fact that Lyons does not enable or anticipate claim 25, claim 26, claim 27, claim 28, claim 29, claim 30, claim 31 and/or claim 32. The U.S.P.T.O. has already acknowledged this fact in the related appeal for application 10/282,113 where they have acknowledge the need to modify the method of database storage used by Lyons – a modification that among other things destroys the ability of Lyons to perform a primary function of generating spreadsheet reports. Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious.

**Issue 3 - Whether claim 33, claim 34, claim 35, claim 36, claim 37, claim 38, claim 39 and/or claim 40 are patentable under 35 USC 102 over Lyons?**

Claim 33, claim 34, claim 35, claim 36, claim 37, claim 38, claim 39 and/or claim 40 are rejected under §102 as being anticipated by Lyons. The Examiner has cited the Lyons document as a reference. The Appellant respectfully traverses the rejections for anticipation in two ways. First, by noting that the rejections fail under both standards of the APA. Second, by noting that the argument used to support the claim rejections fails to establish a prima facie case of anticipation for the rejected claims. More specifically, the 27 February 2007 Office Action containing the claim rejections fails to establish a prima facie case of anticipation in as many as three separate ways for every rejected claim.

The first way in which the 27 February 2007 Office Action fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to describe every element of the rejected claims. MPEP 2131 notes that:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The second way in which the 27 February 2007 Office Action fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to provide the same level of detail that is present in the claim. MPEP 2131 notes that anticipation requires that:

"The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The third way in which the 27 February 2007 Office Action fails to establish a prima facie case of anticipation for many if not all of the claims is that the Office Action does not describe the basis in fact or technical reasoning that is required to support the allegations regarding allegedly inherent characteristics contained in the Lyons reference. MPEP 2112 notes that:

"In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

The Appellant respectfully submits that the rejection of independent claim 33 can be traversed by noting that Lyons: is missing elements contained in claim 33, fails to enable the invention detailed in claim 33, provides insufficient detail regarding elements of claim 33 and that any alleged inherency of features of claim 33 has not been explained. Elements of claim 33 not explicitly or inherently described in the Lyons document include: transaction data and clustering. Lyons also lacks detail regarding transaction data clustering and any alleged inherency of transaction data and clustering has not been explained. As mentioned previously, Lyons does not enable the completion of claim 33 for a variety of reasons. One of the reasons Lyons fails to enable claim 33 is that Lyons is limited to processing financial schedule data and the data used for processing in claim 33 are not included in any known financial schedule. Furthermore, the Lyons data storage method is designed for use with spreadsheets and as a result it does not enable the storage of data in files or tables and it creates a massive redundancy in data storage that

precludes its use in a non-spreadsheet application such as the one described in claim 33 (see Evidence Appendix, pages 43 - 47). As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 33 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 34 can be traversed by noting that Lyons: is missing elements contained in parent claim 33, does not enable parent claim 33, provides insufficient detail regarding elements of parent claim 33 and that any alleged inherency of features of parent claim 33 has not been explained. The rejection of dependent claim 34 can also be traversed by noting that Lyons: is missing elements contained in claim 34, does not enable all the elements of claim 34, provides insufficient detail regarding elements of claim 34 and that any alleged inherency of features of claim 34 has not been explained. Elements of claim 34 not explicitly or inherently described in the Lyons document include: performance indicators, model training, value driver identification, impact summary development and induction. Lyons also lacks detail regarding performance indicators, model training, value driver identification, impact summary development and induction and any inherency of performance indicators, model training, value driver identification, impact summary development and induction has not been explained. Lyons also fails to enable claim 34 because Lyons is limited to processing financial schedule data and the data used for processing in claim 34 are not included in any known financial schedule. Furthermore, the Lyons data storage method is designed for use with spreadsheets and as a result it does not enable the storage of data in files or tables and it creates a massive redundancy in data storage that precludes its use in a non-spreadsheet application such as the one described in claim 34 (see Evidence Appendix, pages 43 - 47). As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 34 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 35 can be traversed by noting that Lyons: is missing elements contained in parent claims 33 and 34, does not enable parent claims 33 and 34, provides insufficient detail regarding elements of parent claims 33 and 34 and that any alleged inherency of features of parents claim 33 and 34 has not been explained. The rejection of dependent claim 35 can also be traversed by noting that Lyons: is missing elements contained in claim 35, does not enable all the elements of claim 35, provides insufficient detail regarding elements of claim 35 and that any alleged inherency of features of claim 35 has not been explained. Elements of claim 35 not explicitly or inherently described in the Lyons document include: current operation, real options and market sentiment. Lyons also lacks detail regarding current operation, real options and market sentiment and any inherency of current operation, real options and market sentiment has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 35 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 36 can be traversed by noting that Lyons: is missing elements contained in parent claim 33, does not enable parent claim 33, provides insufficient detail regarding elements of parent claim 33 and that any alleged inherency of features of parent claim 33 has not been explained. The rejection of dependent claim 36 can also be traversed by noting that Lyons: is missing elements contained in claim 36, provides insufficient detail regarding elements of claim 36 and that any alleged inherency of features of claim 36 has not been explained. Lyons lacks detail regarding revenue, expense, capital change and combinations thereof and any inherency of revenue, expense, capital change and combinations thereof has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 36 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 37 can be traversed



by noting that Lyons: is missing elements contained in parent claim 33, does not enable parent claim 33, provides insufficient detail regarding elements of parent claim 33 and that any alleged inherency of features of parent claim 33 has not been explained. The rejection of dependent claim 37 can also be traversed by noting that Lyons: is missing elements contained in claim 37, does not enable all the elements of claim 37, provides insufficient detail regarding elements of claim 37 and that any alleged inherency of features of claim 37 has not been explained. Elements of claim 37 not explicitly or inherently described in the Lyons document include: genetic algorithms. Lyons also lacks detail regarding genetic algorithms and any inherency of genetic algorithms has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 37 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 38 can be traversed by noting that Lyons: is missing elements contained in parent claim 33, does not enable parent claim 33, provides insufficient detail regarding elements of parent claim 33 and that any alleged inherency of features of parent claim 33 has not been explained. The rejection of dependent claim 38 can also be traversed by noting that Lyons: is missing elements contained in claim 38, does not enable all the elements of claim 38, provides insufficient detail regarding elements of claim 38 and that any alleged inherency of features of claim 38 has not been explained. Elements of claim 38 not explicitly or inherently described in the Lyons document include: unknown value drivers, identifying previously unknown relationships between elements of value and identifying previously unknown relationships between element value drivers. Lyons also lacks detail regarding unknown value drivers, identifying previously unknown relationships between elements of value and identifying previously unknown relationships between element value drivers and any inherency of unknown value drivers, identifying previously unknown relationships between elements of value and identifying previously unknown relationships between element value drivers has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 38 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 39 can be traversed by noting that Lyons: is missing elements contained in parent claim 33, does not enable parent claim 33, provides insufficient detail regarding elements of parent claim 33 and that any alleged inherency of features of parent claim 33 has not been explained. The rejection of dependent claim 39 can also be traversed by noting that Lyons: is missing elements contained in claim 39, does not enable all the elements of claim 39, provides insufficient detail regarding elements of claim 39 and that any alleged inherency of features of claim 39 has not been explained. Elements of claim 39 not explicitly or inherently described in the Lyons document include: alliances, brands, channels, customers, customer relationships, employees, employee relationships, intellectual property, partnerships, processes, supply chains, vendors and vendor relationships. Lyons also lacks detail regarding alliances, brands, channels, customers, customer relationships, employees, employee relationships, intellectual property, partnerships, processes, supply chains, vendors and vendor relationships and any inherency of a alliances, brands, channels, customers, customer relationships, employees, employee relationships, intellectual property, partnerships, processes, supply chains, vendors and vendor relationships has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 39 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 40 can be traversed by noting that Lyons: is missing elements contained in parent claim 33, does not enable parent claim 33, provides insufficient detail regarding elements of parent claim 33 and that any alleged inherency of features of parent claim 33 has not been explained. The rejection of dependent claim 40 can also be traversed by noting that Lyons: is missing elements contained in claim 40, does not

enable all the elements of claim 40, provides insufficient detail regarding elements of claim 40 and that any alleged inherency of features of claim 40 has not been explained. Elements of claim 40 not explicitly or inherently described in the Lyons document include: Kohonen" neural network, K-nearest neighbor, Expectation Maximization and the segmental K-means algorithm. Lyons also lacks detail regarding Kohonen" neural network, K-nearest neighbor, Expectation Maximization and the segmental K-means algorithm and any inherency of Kohonen" neural network, K-nearest neighbor, Expectation Maximization and the segmental K-means algorithm has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 40 has not been established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of anticipation for a single claim. The complete failure to identify anticipation at the claim level clearly illustrates the fact that the cited document is not even remotely similar to the claimed invention. *As noted in MPEP 2112, anticipation requires that a substantial identity be established.* The question as to whether an invention is anticipated by a prior art reference is a factual issue not a subjective one (In re Schreiber, 128 F.3d 1473, 1477 (Fed. Cir. 1997)). It is a fact that Lyons does not enable or anticipate claim 33, claim 34, claim 35, claim 36, claim 37, claim 38, claim 39 and/or claim 40. The U.S.P.T.O. has already acknowledged this fact in the related appeal for application 10/282,113 where they have acknowledge the need to modify the method of database storage used by Lyons – a modification that among other things destroys the ability of Lyons to perform a primary function of generating spreadsheet reports. Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious.

#### **Issue 4 - Whether claim 49, claim 50, claim 51, claim 52, claim 53, claim 54, claim 55 and/or claim 56 are patentable under 35 USC 102 over Lyons?**

Claim 49, claim 50, claim 51, claim 52, claim 53, claim 54, claim 55 and claim 56 are rejected under §102 as being anticipated by U.S. Patent 4,989,141 (hereinafter, Lyons). The Examiner has cited the Lyons document as a reference. The Appellant respectfully traverses the rejections for anticipation in two ways. First, by noting that the rejections fail under both standards of the APA. Second, by noting that the argument used to support the claim rejections fails to establish a prima facie case of anticipation for the rejected claims. More specifically, the 27 February 2007 Office Action containing the claim rejections fails to establish a prima facie case of anticipation in as many as three separate ways for every rejected claim.

The first way in which the 27 February 2007 Office Action fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to describe every element of the rejected claims. MPEP 2131 notes that:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The second way in which the 27 February 2007 Office Action fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to provide the same level of detail that is present in the claim. MPEP 2131 notes that anticipation requires that:

"The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The third way in which the 27 February 2007 Office Action fails to establish a prima facie case of anticipation for many if not all of the claims is that the Office Action does not describe the basis in fact or technical reasoning that is required to support the allegations regarding allegedly inherent characteristics contained in the Lyons reference. MPEP 2112 notes that:

"In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

The Appellant respectfully submits that the rejection of independent claim 49 can be traversed by noting that Lyons: is missing elements contained in claim 49, fails to enable the invention detailed in claim 49, provides insufficient detail regarding elements of claim 49 and that any alleged inherency of features of claim 49 has not been explained. Elements of claim 49 not explicitly or inherently described in the Lyons document include: composite applications and metadata standards. Lyons also lacks detail regarding composite applications and metadata standards and any alleged inherency of composite applications and metadata standards has not been explained. As mentioned previously, Lyons does not enable the completion of claim 49 for a variety of reasons. One of the reasons Lyons fails to enable the completion of claim 49 is that Lyons is limited to processing financial schedule data and the data used for processing in claim 49 are not included in any known financial schedule. Furthermore, the Lyons data storage method is designed for use with spreadsheets and as a result it does not enable the storage of data in files or tables and it creates a massive redundancy in data storage that precludes its use in a non-spreadsheet application such as the one described in claim 49 (see Evidence Appendix, pages 43 - 47). As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 49 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 50 can be traversed by noting that Lyons: is missing elements contained in parent claim 49, does not enable parent claim 49, provides insufficient detail regarding elements of parent claim 49 and that any alleged inherency of features of parent claim 49 has not been explained. The rejection of dependent claim 50 can also be traversed by noting that Lyons: is missing elements contained in claim 50, does not enable all the elements of claim 50, provides insufficient detail regarding elements of claim 50 and that any alleged inherency of features of claim 50 has not been explained. Elements of claim 50 not explicitly or inherently described in the Lyons document include: the ability to flexibly combine two or more independent components of application software. Lyons also lacks detail regarding the ability to flexibly combine two or more independent components of application software and the ability to flexibly combine two or more independent components of application software has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 50 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 51 can be traversed by noting that Lyons: is missing elements contained in parent claim 49, does not enable parent claim 49, provides insufficient detail regarding elements of parent claim 49 and that any alleged inherency of features of parent claim 49 has not been explained. The rejection of dependent claim 51 can also be traversed by noting that Lyons: is missing elements contained in claim 51, does not enable all the elements of claim 51, provides insufficient detail regarding elements of claim 51 and

that any alleged inherency of features of claim 51 has not been explained. Elements of claim 51 not explicitly or inherently described in the Lyons document include: xml, metadata coalition standard and corba. Lyons also lacks detail regarding xml, metadata coalition standard and corba and any inherency of xml, metadata coalition standard and corba has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 51 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 52 can be traversed by noting that Lyons: is missing elements contained in parent claim 49, does not enable parent claim 49, provides insufficient detail regarding elements of parent claim 49 and that any alleged inherency of features of parent claim 49 has not been explained. The rejection of dependent claim 52 can also be traversed by noting that Lyons: is missing elements contained in claim 52, does not enable all the elements of claim 52, provides insufficient detail regarding elements of claim 52 and that any alleged inherency of features of claim 52 has not been explained. Elements of claim 52 not explicitly or inherently described in the Lyons document include: attribute derivation, capitalization, causal analysis, classification, clustering, count linkages, data acquisition, data conversion, data storage, data transformation, element life estimation, indicator selection, induction, keyword counting, keyword search, linkage location, relative strength determination, statistical learning, valuation, vector generation and combinations thereof. Lyons also lacks detail regarding attribute derivation, capitalization, causal analysis, classification, clustering, count linkages, data acquisition, data conversion, data storage, data transformation, element life estimation, indicator selection, induction, keyword counting, keyword search, linkage location, relative strength determination, statistical learning, valuation, vector generation and combinations thereof and any inherency of attribute derivation, capitalization, causal analysis, classification, clustering, count linkages, data acquisition, data conversion, data storage, data transformation, element life estimation, indicator selection, induction, keyword counting, keyword search, linkage location, relative strength determination, statistical learning, valuation, vector generation and combinations thereof has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 52 has not been established.

The Appellant respectfully submits that the rejection of dependent 53 can be traversed by noting that Lyons: is missing elements contained in parent claim 49, does not enable parent claim 49, provides insufficient detail regarding elements of parent claim 49 and that any alleged inherency of features of parent claim 49 has not been explained. The rejection of dependent claim 53 can also be traversed by noting that Lyons: is missing elements contained in claim 53, does not enable all the elements of claim 53, provides insufficient detail regarding elements of claim 53 and that any alleged inherency of features of claim 53 has not been explained. Elements of claim 53 not explicitly or inherently described in the Lyons document include: an element contribution determination, an element impact quantification, an element valuation, an enterprise financial performance analysis, an enterprise financial performance optimization, a keyword location identification, an enterprise financial performance simulation, a future market value optimization, a future market value quantification, a management report production, a real option discount rate calculation, a real option valuation, a share price valuation, an element of value segmentation, a target share price determination, a keyword count and combinations thereof. Lyons also lacks detail regarding an element contribution determination, an element impact quantification, an element valuation, an enterprise financial performance analysis, an enterprise financial performance optimization, a keyword location identification, an enterprise financial performance simulation, a future market value optimization, a future market value quantification, a management report production, a real option discount rate calculation, a real option valuation, a share price valuation, an element of value segmentation, a target share price determination, a keyword count and combinations thereof and any inherency of an element contribution determination, an element

impact quantification, an element valuation, an enterprise financial performance analysis, an enterprise financial performance optimization, a keyword location identification, an enterprise financial performance simulation, a future market value optimization, a future market value quantification, a management report production, a real option discount rate calculation, a real option valuation, a share price valuation, an element of value segmentation, a target share price determination, a keyword count and combinations thereof has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 53 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 54 can be traversed by noting that Lyons: is missing elements contained in parent claim 49, does not enable parent claim 49, provides insufficient detail regarding elements of parent claim 49 and that any alleged inherency of features of parent claim 49 has not been explained. The rejection of dependent claim 54 can also be traversed by noting that Lyons: is missing elements contained in claim 54, does not enable all the elements of claim 54, provides insufficient detail regarding elements of claim 54 and that any alleged inherency of features of claim 54 has not been explained. Elements of claim 54 not explicitly or inherently described in the Lyons document include: business intelligence system databases, customer relationship management system databases, channel management system databases, web site system databases and the Internet. Lyons also lacks detail regarding business intelligence system databases, customer relationship management system databases, channel management system databases, web site system databases and the Internet and any inherency of business intelligence system databases, customer relationship management system databases, channel management system databases, web site system databases and the Internet has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 54 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 55 can be traversed by noting that Lyons: is missing elements contained in parent claim 49, does not enable parent claim 49, provides insufficient detail regarding elements of parent claim 49 and that any alleged inherency of features of parent claim 49 has not been explained. The rejection of dependent claim 55 can also be traversed by noting that Lyons: is missing elements contained in claim 55, does not enable all the elements of claim 55, provides insufficient detail regarding elements of claim 55 and that any alleged inherency of features of claim 55 has not been explained. Elements of claim 55 not explicitly or inherently described in the Lyons document include: metadata mapping. Lyons also lacks detail regarding metadata mapping and any inherency of metadata mapping has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 55 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 56 can be traversed by noting that Lyons: is missing elements contained in parent claim 49, does not enable parent claim 49, provides insufficient detail regarding elements of parent claim 49 and that any alleged inherency of features of parent claim 49 has not been explained. The rejection of dependent claim 56 can also be traversed by noting that Lyons: is missing elements contained in claim 56, does not enable all the elements of claim 56, provides insufficient detail regarding elements of claim 56 and that any alleged inherency of features of claim 56 has not been explained. Elements of claim 56 not explicitly or inherently described in the Lyons document include: bots. Lyons also lacks detail regarding bots and any inherency of bots has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 56 has not been established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to

produce the evidence required to establish a prima facie case of anticipation for a single claim. The complete failure to identify anticipation at the claim level clearly illustrates the fact that the cited document is not even remotely similar to the claimed invention. As noted in MPEP 2112, anticipation requires that a substantial identity be established. The question as to whether an invention is anticipated by a prior art reference is a factual issue not a subjective one (In re Schreiber, 128 F.3d 1473, 1477 (Fed. Cir. 1997)). It is a fact that Lyons does not enable or anticipate claim 49, claim 50, claim 51, claim 52, claim 53, claim 54, claim 55 and/or claim 56. The U.S.P.T.O. has already acknowledged this fact in the related appeal for application 10/282,113 where they have acknowledge the need to modify the method of database storage used by Lyons – a modification that among other things destroys the ability of Lyons to perform a primary function of generating spreadsheet reports. Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious. Finally, it should be noted that the misclassification of the pending claims into class 705 has resulted in the use of a different standard than that used for similar applications such as Warshavsky and Abrams that did not cite Lyons as a prior art reference.

**Issue 5 - Whether claim 57, claim 58, claim 59, claim 60 and/or claim 61 are patentable under 35 USC 102 over Lyons?**

Claim 57, claim 58, claim 59, claim 60 and claim 61 are rejected under §102 as being anticipated by Lyons. The Examiner has cited the Lyons document as a reference. The Appellant respectfully traverses the rejections for anticipation in two ways. First, by noting that the rejections fail under both standards of the APA. Second, by noting that the argument used to support the claim rejections fails to establish a prima facie case of anticipation for the rejected claims. More specifically, the 27 February 2007 Office Action containing the claim rejections fails to establish a prima facie case of anticipation in as many as three separate ways for every rejected claim.

The first way in which the 27 February 2007 Office Action fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to describe every element of the rejected claims. MPEP 2131 notes that:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The second way in which the 27 February 2007 Office Action fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to provide the same level of detail that is present in the claim. MPEP 2131 notes that anticipation requires that:

"The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The third way in which the 27 February 2007 Office Action fails to establish a prima facie case of anticipation for many if not all of the claims is that the Office Action does not describe the basis in fact or technical reasoning that is required to support the allegations regarding allegedly inherent characteristics contained in the Lyons reference. MPEP 2112 notes that:

"In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent

characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

The Appellant respectfully submits that the rejection of independent claim 57 can be traversed by noting that Lyons: is missing elements contained in claim 57, fails to enable the invention detailed in claim 57, provides insufficient detail regarding elements of claim 57 and that any alleged inherency of features of claim 57 has not been explained. Elements of claim 57 not explicitly or inherently described in the Lyons document include: automated data integration and metadata standards. Lyons also lacks detail regarding automated data integration and metadata standards and any alleged inherency of automated data integration and metadata standards has not been explained. As mentioned previously, Lyons does not enable the completion of claim 57 for a variety of reasons. One of the reasons Lyons fails to enable the completion of claim 57 is that Lyons is limited to processing financial schedule data and the data used for processing in claim 57 are not included in any known financial schedule. Furthermore, the Lyons data storage method is designed for use with spreadsheets and as a result it does not enable the storage of data in files or tables and it creates a massive redundancy in data storage that precludes its use in a non-spreadsheet application such as the ones supported by claim 57 (see Evidence Appendix, pages 43 - 47). As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 57 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 58 can be traversed by noting that Lyons: is missing elements contained in parent claim 57, does not enable parent claim 57, provides insufficient detail regarding elements of parent claim 57 and that any alleged inherency of features of parent claim 57 has not been explained. The rejection of dependent claim 58 can also be traversed by noting that Lyons: is missing elements contained in claim 58, does not enable all the elements of claim 58, provides insufficient detail regarding elements of claim 58 and that any alleged inherency of features of claim 58 has not been explained. Elements of claim 58 not explicitly or inherently described in the Lyons document include: metadata mapping. Lyons also lacks detail regarding metadata mapping and any inherency of metadata mapping has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 58 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 59 can be traversed by noting that Lyons: is missing elements contained in parent claim 57, does not enable parent claim 57, provides insufficient detail regarding elements of parent claim 57 and that any alleged inherency of features of parent claim 57 has not been explained. The rejection of dependent claim 59 can also be traversed by noting that Lyons: is missing elements contained in claim 59, does not enable all the elements of claim 59, provides insufficient detail regarding elements of claim 59 and that any alleged inherency of features of claim 59 has not been explained. Elements of claim 59 not explicitly or inherently described in the Lyons document include: business intelligence system databases, customer relationship management system databases, channel management system databases, web site system databases and the Internet. Lyons also lacks detail regarding business intelligence system databases, customer relationship management system databases, channel management system databases, web site system databases and the Internet and any inherency of business intelligence system databases, customer relationship management system databases, channel management system databases, web site system databases and the Internet has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 59 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 60 can be traversed by noting that Lyons: is missing elements contained in parent claim 57, does not enable parent

claim 57, provides insufficient detail regarding elements of parent claim 57 and that any alleged inherency of features of parent claim 57 has not been explained. The rejection of dependent claim 60 can also be traversed by noting that Lyons: is missing elements contained in claim 60, does not enable all the elements of claim 60, provides insufficient detail regarding elements of claim 60 and that any alleged inherency of features of claim 60 has not been explained. Elements of claim 60 not explicitly or inherently described in the Lyons document include: keyword search. Lyons also lacks detail regarding keyword search and any inherency of keyword search has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 60 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 61 can be traversed by noting that Lyons: is missing elements contained in parent claim 57, does not enable parent claim 57, provides insufficient detail regarding elements of parent claim 57 and that any alleged inherency of features of parent claim 57 has not been explained. The rejection of dependent claim 61 can also be traversed by noting that Lyons: is missing elements contained in claim 61, does not enable all the elements of claim 61, provides insufficient detail regarding elements of claim 61 and that any alleged inherency of features of claim 61 has not been explained. Elements of claim 61 not explicitly or inherently described in the Lyons document include: keywords comprised of a word selected from a category consisting of company name, brand name, trademark and combinations thereof. Lyons also lacks detail regarding keywords comprised of a word selected from a category consisting of company name, brand name, trademark and combinations thereof and any inherency of keywords comprised of a word selected from a category consisting of company name, brand name, trademark and combinations thereof has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 61 has not been established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of anticipation for a single claim. The complete failure to identify anticipation at the claim level clearly illustrates the fact that the cited document is not even remotely similar to the claimed invention. *As noted in MPEP 2112, anticipation requires that a substantial identity be established.* The question as to whether an invention is anticipated by a prior art reference is a factual issue not a subjective one (In re Schreiber, 128 F.3d 1473, 1477 (Fed. Cir. 1997)). It is a fact that Lyons does not enable or anticipate claim 57, claim 58, claim 59, claim 60 and/or claim 61. The U.S.P.T.O. has already acknowledged this fact in the related appeal for application 10/282,113 where they have acknowledge the need to modify the method of database storage used by Lyons – a modification that among other things destroys the ability of Lyons to perform a primary function of generating spreadsheet reports. Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious. Finally, it should be noted that the misclassification of the pending claims into class 705 has resulted in the use of a different standard than that used for similar applications such as Warshavsky and Abrams that did not cite Lyons as a prior art reference.

#### **Issue 6 - Whether claim 25, claim 33 and/or claim 57 are indefinite under 35 USC 112, second paragraph?**

Claim 25 is rejected as indefinite for including the phrases “using at least a portion of said data” and “one or more aspects”. Claim 33 is rejected as indefinite for including the phrases “using at least a portion of said data” and “one or more aspects”. Claim 57 is rejected as indefinite for including the phrases “metadata standard” and “disparate source”.



Claim 25, claim 33 and claim 57 are each patentable for at least four separate reasons:

- 1) the arguments presented by the Examiner fail to establish a prima facie case that would support a written description rejection under 35 USC 112 second paragraph for a single claim,
- 2) the arguments the Examiner has used to support a written description rejection under 35 USC 112 second paragraph fail to comply with the requirements of the Administrative Procedures Act and are therefore moot,
- 3) the specification and drawings clearly define the metes and bounds of each claim, and
- 4) the claims of the instant application are apparently being reviewed under a different standard than that used for the review of claims in similar patents, an apparent violation of 35 USC 3.

The first way the Appellant will traverse the 35 U.S.C. §112 second paragraph rejection of claim 25, claim 33 and claim 57 will be by noting that the arguments presented by the Examiner in rejecting these claims fail to establish the prima facie case required to sustain a §112 second paragraph rejection. *MPEP 2173.02 states that: definiteness of claim language must be analyzed, not in a vacuum, but in light of:*

- (A) *The content of the particular application disclosure;*
- (B) *The teachings of the prior art; and*
- (C) *The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.*

*In reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent. See, e.g., Solomon v. Kimberly-Clark Corp., 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000). See also In re Larsen, No. 01-1092 (Fed. Cir. May 9, 2001). In the case of claim 25, claim 33 and claim 57 the Examiner has failed to establish the prima facie case that the specification does not meet the requirements of §112 second paragraph in as many as five ways for every rejected claim. The five ways are:*

1. by failing to interpret the claims in light of the specification – the specification clearly explains which portion of the data are used in processing, which aspects of financial performance are being analyzed, the identity of the disparate sources of data and which metadata standards are being used.
2. by failing to interpret the claims in light of the prior art – the prior art makes it clear that these phrases have widely used by others without confusion,
3. by failing to provide any evidence that someone of average skill in the relevant arts would have difficulty interpreting the claims – the office action did not contain declarations from anyone with average skill in the art of data processing or financial management,
4. by failing to establish that the limitation(s) in the claims fail to describe the invention - limitations associated with the allegedly confusing phrases are included in the claim (in the case of metadata standard and disparate source) and in a dependent claim (in the case of aspects of financial performance),

5. by failing to consider the claim as a whole – the Examiner has cited a number of phrases as the basis for the claim rejections and has not discussed the claims as a whole.

As noted previously, the second way the Appellant will respectfully traverse the §112 second paragraph rejections of claim 25, claim 33 and claim 57 is by noting that the assertions regarding the alleged indefiniteness of the claims are not in compliance with the requirements of the Administrative Procedures Act and are therefore moot. In *Dickinson v. Zurko*, 119 S. Ct. 1816, 50 USPQ2d 1930 (1999), the Supreme Court held that the appropriate standard of review of PTO findings are the standards set forth in the Administrative Procedure Act ("APA") at 5 U.S.C. 706 (1994). The APA provides two standards for review – an arbitrary and capricious standard and a substantial evidence standard. The Appellant respectfully submits that discussion in the preceding paragraphs clearly shows that the instant Office Action fails to provide even a scintilla of evidence to support the allegation that the specification does not meet the requirements of §112 second paragraph and that as a result it fails to meet the substantial evidence standard. The Appellant respectfully submits that the §112 second paragraph rejections of claim 25, claim 33 and claim 57 also fails to pass the arbitrary and capricious test because the Examiner has not provided any evidence of relevant fact finding that can be connected to these rejections. In particular, the Appellant notes that the 27 February 2007 Office Action does not contain any declarations from individuals with the requisite skill in the art of data processing or financial management to support the assertions regarding the claims. The Appellant notes that there are still other ways in which these rejections can be shown to be arbitrary, capricious and discriminatory.

The third way the Appellant will traverse these claim rejections is by noting that the disclosure and prior art clearly explains the term "using at least a portion of said data", "metadata standard", "disparate source" and "for each aspect". In particular, the specification clearly explains the portion of the data that is being used, identifies the metadata standards being used, specifically identifies the disparate sources of data and specifically lists the aspects of performance being analyzed.

The fourth way is by noting that the claims of the instant application is apparently being reviewed under a different standard than that used for the review of similar patents - an apparent violation of 35 USC 3. For example, there are several hundred patents that used the term "using at least a portion of the data" (see Evidence Appendix, pages 52 and 53). More specifically, IBM is allowed to use this term in its issued patents without providing an explanation as to which portion of data is being used (see for example U.S. Patent 6,246,672). In a similar manner, "disparate source" is used in the claims of 11 patents including patents issued to IBM and Mercedes (see Evidence Appendix, pages 48 and 49). None of the patent holders provided anything close to the level of detail regarding the identity of the disparate sources of data that was provided in the specification for the instant application. Finally, it is worth noting that metadata standard is a well known term and it combines two well known words whose meanings are well known, the phrase is also mentioned in at least seven issued patents. It is important to note that those writing the specification for these patents and examining these patents did not feel the need to define the term which provides further evidence that its meaning is well known to those of average skill in the art. In short, the Examiner is questioning the use of certain phrases used in the claims in spite of the fact that the instant application provides as much or more explanation than that provided by other applicants for claims using these same terms in issued patents.

## Conclusion

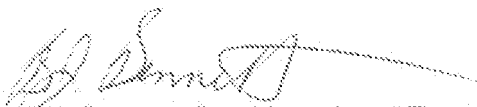
The Appellant notes that an information disclosure statement for the instant application was unintentionally delayed and was submitted yesterday. It is believed that the delay in the submission of this information disclosure statement will have no material effect on the prosecution of this appeal because Lyons is the only document cited in the claim rejections and the Examiner does not appear to be reviewing the references (see below).

The Appellant also notes that with respect to the prosecution of the instant application, it appears that the U.S.P.T.O. has not fully complied with the requirements set forth in the APA, 35 USC 3 and 35 USC 131. Among other things, the Appellant specifically notes that:

- a) the Examiner refused to acknowledge the receipt of references from information disclosure statements submitted in accordance with the requirements of 37 CFR 1.97 several years ago;
- b) at least some of the claims appear to have been misclassified under class 705; and
- c) the prior art, subject matter eligibility and claims of the instant application appear to have been reviewed under a different standard than that used for the review and allowance of similar applications.

Finally, as detailed above there is no evidence to support the art rejections (a fact the U.S.P.T.O. seems to have acknowledged in the related appeal for 10/282,113) and there is no evidence to support the non-art rejections of the pending claims. At the same time, evidence that supports the patentability of the rejected claims has been arbitrarily excluded or ignored. For these reasons and the extensive reasons detailed above, the Appellant respectfully but forcefully contends that each claim is patentable. Therefore, reversal of all rejections is courteously solicited.

Respectfully submitted,



B.J. Bennett, President, Asset Trust, Inc.

Dated: August 4, 2007

## CLAIMS APPENDIX

25. A finance method, comprising:

integrating data from organization transaction databases in accordance with a common schema for an organization with one or more enterprises; and  
using at least a portion of the data to develop a model that identifies a net contribution of one or more elements of value to an organization share price by a category of value and a plurality of tools for organization financial management selected from the group consisting of one or more category of value models, one or more component of value models, one or more market value models, one or more network models, one or more optimization models, a plurality of segmentation models, a plurality of simulation models, one or more value chain models, a plurality of management reports, one or more lists of changes that will optimize one or more aspects of organization financial performance; a system for automated trading of an organization equity security based on a market sentiment value and combinations thereof  
where the categories of value are current operation and a category of value selected from the group consisting of real options, market sentiment and combinations thereof.

26. The method of claim 25 where an element of value is selected from the group consisting of alliances, brands, channels, customers, customer relationships, employees, employee relationships, equipment intellectual property, partnerships, processes, supply chains, vendors and vendor relationships and combinations thereof.

27. The method of claim 25 where developing a model that identifies a net contribution of one or more elements of value to an organization share price value by a category of value further comprises:

creating performance indicators for each element of value using at least a portion of the data, training models of historical and forecast data for one or more aspects of financial performance using said indicators to identify value driver candidates by element of value by enterprise, analyzing historical and forecast data for one or more aspects of financial performance using induction algorithms and said value driver candidates to identify value drivers and create element impact summaries by enterprise, and  
using said element impact summaries to quantify a contribution of each of one or more elements of value to an organization share price value by category of value by enterprise.

28. The method of claim 27 where an aspects of financial performance is selected from the group consisting of revenue, expense, capital change, market value, alliance value, brand value, channel value, customer value, customer relationship value, employee value, employee relationship value, intellectual property value, partnership value, process value, supply chain value, vendor value, vendor relationship value and combinations thereof.

29. The method of claim 27 where a contribution of an element of value to a category of value is a net contribution of the element of value to the category of value and the other elements of value.

30. The method of claim 25 that further comprises using a model that identifies a net contribution of one or more elements of value to an organization share price by a category of value to complete activities selected from the group consisting of identifying changes to one or more element value drivers that will optimize one or more aspects of organization financial performance, identifying the impact of value driver changes on one or more aspects of organization financial performance in an interactive manner, reporting organization market and share price value by element of value, reporting organization market and share price value by category of value, identifying a price point for trading organization shares and combinations thereof.

31. The method of claim 25 where an organization transaction database is selected from the group consisting of advanced financial system databases, basic financial system databases, alliance management system databases, brand management system databases, business intelligence system databases, customer relationship management system databases, channel management system databases, estimating system databases, intellectual property management system databases, process management system databases, supply chain management system databases, vendor management system databases, operation management system databases, enterprise resource planning systems (ERP), material requirement planning systems (MRP), quality control system databases, sales management system databases, human resource system databases, accounts receivable system databases, accounts payable system databases, capital asset system databases, inventory system databases, invoicing system databases, payroll system databases, purchasing system databases, web site system databases, the Internet, external databases, user input and combinations thereof.

32. The method of claim 25 where a transaction is any event that is logged or recorded.

33. A computer readable medium having sequences of instructions stored therein, which when executed cause a processor in a computer to perform a learning method, comprising:

integrating data from organization transaction databases in accordance with a common schema for an organization with one or more enterprises;

identifying a set of data records that are associated with each of one or more aspects of enterprise financial performance from said integrated data that can be used for training a plurality of cluster models for each aspect of enterprise financial performance, and

generating a plurality of cluster models that identify a plurality of segments for each aspect of financial performance, by learning from at least a portion of the data

where said cluster models when taken together comprise an overall model for each aspect of financial performance, and

where the aspects of financial performance are selected from the group consisting of category of value, component of value, element of value, market value and combinations thereof.

34. The computer readable medium of claim 33, wherein identifying a plurality of segments for an element of value further comprises:

creating a plurality of performance indicators for each element of value using at least a portion of the data,

evolving a plurality of models of historical and forecast data for one or more aspects of financial performance using said indicators to learn which indicators are value driver candidates by enterprise,

evolving a plurality of induction models of historical and forecast data for one or more aspects of enterprise financial performance using said candidates to learn which indicators are value drivers while creating a plurality of element impact summaries from said value drivers, and

using said element impact summaries to identify a plurality of segments for each element of value with a clustering algorithm.

35. The computer readable medium of claim 34 where a contribution of each of one or more elements of value to a value of a business is segmented by a category of value where the categories of value are selected from the group consisting of current operation, real options, market sentiment and combinations thereof.

36. The computer readable medium of claim 33, wherein a component of value is selected from the group consisting of revenue, expense, capital change and combinations thereof.

37. The computer readable medium of claim 33, wherein the method further comprises using a genetic algorithm to evolve a plurality of models.

38. The computer readable medium of claim 33 where learning from the data further comprises activities selected from the group consisting of identifying previously unknown value drivers, identifying previously unknown relationships between elements of value, identifying previously unknown relationships between element value drivers and combinations thereof.

39. The computer readable medium of claim 33, wherein an element of value is selected from the group consisting of alliances, brands, channels, customers, customer relationships, employees, employee relationships, equipment intellectual property, partnerships, processes, supply chains, vendors and vendor relationships and combinations thereof.

40. The computer readable medium of claim 33, wherein a cluster model is developed using algorithms selected from the group consisting of "Kohonen" neural network, K-nearest neighbor, Expectation Maximization and the segmental K-means algorithm.

49. A computer readable medium having sequences of instructions stored therein, which when executed cause the processor in a computer to perform a composite application method for data processing, comprising: using two or more independent components of application software to produce one or more useful results by processing a set of data where said data has been integrated from two or more systems in an automated fashion accordance with a common model or schema defined by a common metadata standard.

50. The computer readable medium of claim 49, wherein two or more independent components of application software can be flexibly combined as required to support the development of one or more useful results.

51. The computer readable medium of claim 49, wherein a common metadata standard is selected from the group consisting of xml, metadata coalition standard and corba.

52. The computer readable medium of claim 49, wherein an independent component of application software completes processing selected from the group consisting of: data analysis,

attribute derivation, capitalization, causal analysis, classification, clustering, count linkages, data acquisition, data conversion, data storage, data transformation, element life estimation, indicator selection, induction, keyword counting, keyword search, linkage location, relative strength determination, statistical learning, valuation, vector generation and combinations thereof.

53. The computer readable medium of claim 49, wherein one or more useful results are selected from the group consisting of: an element contribution determination, an element impact quantification, an element valuation, an enterprise financial performance analysis, an enterprise financial performance optimization, a keyword location identification, an enterprise financial performance simulation, a future market value optimization, a future market value quantification, a management report production, a real option discount rate calculation, a real option valuation, a share price valuation, an element of value segmentation, a target share price determination, a keyword count and combinations thereof.

54. The computer readable medium of claim 49, wherein two or more systems are selected from the group consisting of accounts receivable systems, accounts payable systems, advanced financial systems, basic financial systems, alliance management systems, brand management systems, customer relationship management systems, channel management systems, estimating systems, intellectual property management systems, process management systems, supply chain management systems, vendor management systems, operation management systems, sales management systems, human resource systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems, web site management systems, the Internet, external databases and combinations thereof.

55. The computer readable medium of claim 49, wherein a plurality of data are integrated from two or more systems in accordance with a common model or schema defined by a common metadata standard using metadata mapping.

56. The computer readable medium of claim 49, wherein two or more independent components of application software further comprise two or more bots.

57. A computer readable medium having sequences of instructions stored therein, which when executed cause the processor in a computer to perform a data method, comprising:

automatically integrating data from a plurality of disparate sources into a common database



using a metadata standard

where the plurality of disparate sources further comprise data sources selected from the group consisting of a plurality of database management systems associated with a plurality of transactions systems for one or more commercial enterprises, one or more external databases, an Internet and combinations thereof and

where a metadata standard is selected from the group consisting of xml and metadata coalition standard.

58. The computer readable medium of claim 57, wherein a plurality of data from a plurality of disparate data sources are automatically integrated into a common database using metadata mapping.

59. The computer readable medium of claim 57, wherein a plurality of enterprise transactions systems are selected from the group consisting of accounts receivable systems, accounts payable systems, advanced financial systems, basic financial systems, alliance management systems, brand management systems, customer relationship management systems, channel management systems, estimating systems, intellectual property management systems, process management systems, supply chain management systems, vendor management systems, operation management systems, sales management systems, human resource systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems, web site management systems and combinations thereof.

60. The computer readable medium of claim 57, wherein the method further comprises performing a search for one or more keywords and making a set of results from said search available using an electronic display.

61. The computer readable medium of claim 61, wherein a keyword further comprises a word selected from a category consisting of company name, brand name, trademark and combinations thereof.

## **Evidence Appendix**

Pages 43 – 47	excerpt from Lyons (4,989,141) cited 5/25/2007
Page 48	excerpt from Abrams (6,675,350) received 5/25/2007
Page 49	excerpt from Mahmood et al (7,177,822) received 5/25/2007
Page 50	excerpt from Warshavsky (6,675,350) received 9/13/2004
Page 51	list of patents using certain words received 5/25/2007
Pages 52 - 53	list of patents using certain words received 5/25/2007

[54] COMPUTER SYSTEM FOR FINANCIAL ANALYSES AND REPORTING

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[21] Appl. No.: 55,823

[22] Filed: Jun. 1, 1987

[51] Int. Cl.<sup>5</sup> ..... G06F 15/30

[52] U.S. Cl. .... 364/408

[58] Field of Search ..... 364/408

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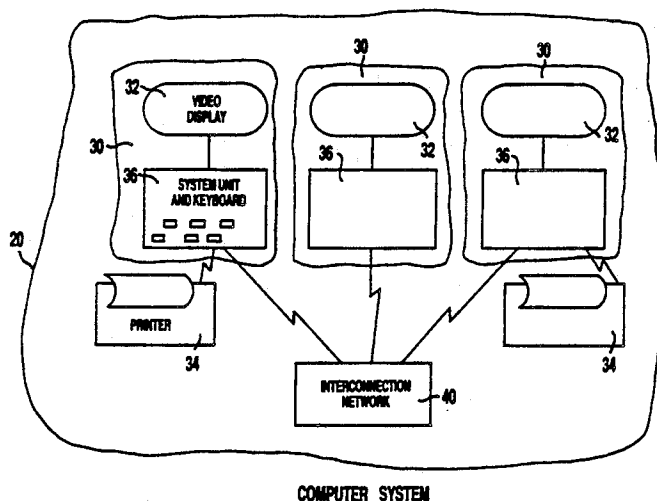
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[57]

## ABSTRACT

An advanced financial reporting and analysis software package is described. The package collects, organizes, manages and consolidates financial data and provides user defined capabilities for creating financial and corporate reports. Financial data is organized into four business classifications or dimensions: Schedule, Entity, Period and Type. Data is stored in the system in such a way that all data associated with a particular Schedule, Entity, Period and Type is identified by that particular SEPT value. To accommodate automatic data entry, a mapping means or template is provided that specifies for each different input spreadsheet the location of the first data cell in the spreadsheet and the size of the spreadsheet. Data is read from the data store by various report and spreadsheet generating functions which convert data associated with particular SEPT values to desired output formats.

10 Claims, 29 Drawing Sheets



COMPUTER SYSTEM

## COMPUTER SYSTEM FOR FINANCIAL ANALYSES AND REPORTING

### BACKGROUND OF THE INVENTION

This relates generally to computer systems and more particularly to a computer software method and apparatus for advanced financial applications such as general ledger, inventory, accounts payable, accounts receivable, financial and management reporting, and financial analysis and consolidation.

Corporate software systems generally are divided into two categories. The first, basic financial systems, includes general ledger, accounts receivable and accounts payable systems. These systems include computer worksheets and data bases. The second, advanced financial systems and processes, uses information from the basic financial systems to perform financial analysis and reporting functions.

At present many of the basic financial systems applications reside on micro computer software packages.

Worksheet applications allow the user to keep a two dimensional chart of his financial data on an electronic worksheet. Illustrative of such spread sheet applications is Lotus Development Corporation's LOTUS 1-2-3®. That program allows the user to set up two dimensional worksheets in the form of a grid made up of horizontal rows and vertical columns. Each intersection of a row or column forms a cell in which data can be stored in the form of numeric data (such as an account balance), text (such as an account name), or arithmetic operators (such as a formula which manipulates the contents of other cells). To enter data into a worksheet, the user will usually enter data via a keyboard, cell by cell. When users employ LOTUS 1-2-3® to perform more detailed analyses it is likely that they have also created complicated strings of commands (i.e., macros) to facilitate data entry, management and reporting capabilities. Since these macros have been created by specific individuals, they can be difficult to revise should business dictate. More important, because these macros are tailored to a user's personal needs, the application's usefulness across the corporation is limited.

These spreadsheet programs are also limited by their presentation of data in only two dimensions. This often requires considerable reorganization of the data before it can be used in advanced financial systems.

Database packages such as Ashton Tate's dBASE III® allow the user to keep a financial data base. Frequently, this information is needed for use in a report having a format different from that in which it is stored or in a spreadsheet such as that generated by one of the computer spreadsheets. However, report generation can be tedious and a great deal of data manipulation must be performed in order to load data from a data base into an electronic worksheet. For example, to load data from a data base to an electronic spreadsheet, the user must convert the data into an ASCII file and subsequently download it into an electronic worksheet. When data is downloaded into a worksheet each field must be inserted into a cell. The downloading of data into the worksheet must be done with extreme care, otherwise cells containing formulas may be overwritten.

In addition to the above limitations, personal computer programs also generally lack the capacity to implement complex information management and finance

controls such as audit trails and password protection capabilities needed in high-level financial applications.

These programs also have the limitations that they are typing intensive with the result that the user must either acquire reasonable typing skills in order to use such programs efficiently or he must suffer considerable time penalties as he attempts to cope with extensive keyboard input.

### SUMMARY OF THE INVENTION

The present invention is an advanced financial reporting and analysis software package. The package collects, organizes, manages and consolidates financial data and provides user defined capabilities for creating financial and corporate reports.

Data can be loaded into the computer system manually as well as from known micro-computer packages such as LOTUS 1-2-3® and Ashton-Tate's dBase® and also from departmental and corporate data bases and basic financial systems such as general ledger, accounts payable and inventory applications. The software package can also incorporate data from outside sources, such as Dow Jones News/Retrieval service to permit analysis of competitive financial data.

Data is output from the financial data base of the present invention either into reports or directly into electronic worksheets. The data can be displayed in various ways allowing the user to use the system as an analysis tool as well as a production reporting system. The process of loading data base information into an electronic worksheet is far simpler than the method which must be employed when working with two separate conventional packages.

In accordance with the invention, financial data is organized into four business classifications or dimensions: Schedule, Entity, Period and Type. Schedule identifies the kind of document the data comes from (e.g., an income statement, a tax schedule). Entity identifies the reporting group within the business organization (e.g., departments, divisions, subsidiaries). Period identifies the range of time that the data represents (e.g., FY 87, Q2 87). Type provides an additional dimension that can be used to further categorize the data (e.g., actual, budget, forecast).

Data is stored in the system in such a way that all data associated with a particular Schedule, Entity, Period and Type (SEPT) is identified by that particular SEPT value and is stored in a predetermined pattern relative to the location of that SEPT value in the data store.

To accommodate automatic data entry, a mapping means or template is provided that specifies for each different input spreadsheet the location of the first data cell in the spreadsheet and the size of the spreadsheet. From this information, the system is able to locate the data in the spreadsheet and read it systematically into the data store.

Data is read from the data store by various report and spreadsheet generating functions which convert data associated with particular SEPT values to desired output formats. For example, one such function might map data associated with the same Schedule, Entity and Type but consecutive Periods over several years onto a spreadsheet having as many columns as there are Periods so as to produce a spreadsheet showing the variation of such data over time.

One function of the present invention is to consolidate information that arrives at corporation's headquarter.

ters in multiple formats from the corporation's numerous divisions and subsidiaries. Through usercontrolled dictionaries within its user interface, the computer application standardizes the way financial information is managed and analyzed within a corporation. In addition, the system allows for hierarchical mapping so that subsidiaries are attached to the controlling entities. Therefore, when data is input into the data base so as to update an entry, all entities which are attached to the updated entity are also updated.

Other features of the invention include a modeling function which is integrated with the data store so that data associated with any SEPT value can be recalled for use in calculating the model or for comparison with the model.

In addition to financial and management reporting and analysis, other application areas include international planning and analysis, consolidation and tax analysis and the like. Reporting functions include currency conversion, journal entries, hierarchy roll-ups and computation of year to date totals and variances. Additional features include audit trails and data verification.

The present invention may be used as a stand alone system, but is preferably for departmental use. The financial computer system and process is designed for use by all levels of employees who are involved in financial control, whether it be a firm's chief financial officer or an end user in the financial department.

The financial system of the present invention is presently sold commercially by the assignee as the FAS-TAR™ financial computer program. Further details of the operation of the system are set forth in the FAS-TAR™ Tutorial, Reference Guide, Quick Reference, Modeling Guide, and Modeling Quick Reference available from the assignee, which are incorporated here by reference.

### BRIEF DESCRIPTION OF DRAWINGS

These and other objects, features and advantages of the invention will be more readily apparent from the following description of a preferred embodiment of the invention in which:

FIG. 1 is a system overview of an illustrative computer system used in the practice of the invention;

FIG. 2 is a flow chart depicting the user's interaction with the system;

FIGS 3A-6B are flowcharts depicting the implementation of the Create function of the present invention;

FIGS. 7-18 are flowcharts depicting the implementation of the Input function of the present invention;

FIGS. 19-23 are flowcharts depicting the implementation of the Query function of the present invention; and

FIGS. 24-26 are flowcharts depicting the implementation of the Pop-up function of the present invention.

### DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

As shown in FIG. 1, the preferred embodiment of the invention is a computer system 20 illustratively comprising a plurality of personal computers 30 and an interconnection network 40. The system can be networked to twenty-five users or more. Resident in the memory of one of the computers 30 and accessible to all of them is the data base management program of the present invention which provides for advanced query and analysis functions.

The personal computers illustratively are IBM-PC's or clones or any of the more advanced personal computers now available. As is well known such computers include a processor, a read/write memory and means for writing data into said memory and reading data from said memory. Typical memory configurations used with the present invention should include at least 640 Kilobytes of semiconductor random access memory and at least a 10 megabyte hard disk. Each such computer includes a video display 32, a printer 34, and a keyboard 36 that provides for alphanumeric input, function keys and a cursor control. Data can be input from the keyboard or from computer files such as electronic worksheets. Data can be output to printed reports and to electronic worksheets.

Unlike conventional data base management systems or worksheet applications, the system of the present invention allows for a four dimensional analysis of all financial data. In particular, the data stored in the system is organized into four business classifications or dimensions, namely Schedule, Entity, Period and Type (SEPT). Schedule identifies the type of document the data comes from (e.g., income statements, budgets, tax schedules) Entity identifies a reporting group within the organization (e.g., departments, subsidiaries). Period identifies the time that the data represents (e.g., FY 87, Q2 87). Type provides an additional dimension that allows the user to further categorize data (e.g., actual, budgeted, forecast).

In storage, all the data associated with a particular Schedule, Entity, Period and Type is identified by that particular SEPT value. Thus, the system data base can be represented as follows:

$$S_1, E_1, P_1, T_1, \text{datacell}_1, \dots, \text{datacell}_x$$

$$S_k, E_l, P_m, T_n, \text{datacell}_1, \dots, \text{datacell}_y$$

where the number of SEPT values can be as great as the product of the numbers of Schedules, Entities, Periods and Types (i.e.,  $k \cdot l \cdot m \cdot n$ ) and the number of data cells associated with each SEPT value can vary.

In addition to the data base, the system of the present invention also provides a means of mapping input data from its source to the location in the database assigned to the particular SEPT value with which it is associated and means for mapping data from the database location assigned to the SEPT values to an output format. The input mapping means is referred to below as an input template. Several output mapping means are described below for the generation of output reports or files.

When retrieving data from the system, the user can specify data from different categories in each of the dimensions. For example, the user may have defined a data base with the following SEPT entries:

SCHEDULES	ENTITIES	PERIODS	TYPES
Income statement	Corporate	Q1 87	Actual
Balance Sheet	U.S.	Q2 87	Budgeted
Sales Budget	Far East	Q3 87	Forecast
Tax Schedule	Europe	Q4 87	Q4 Var

The user could then retrieve data on the basis of any combination of the categories found in each of the four dimensions. For example, the user could request:

Schedule=Sales Budget  
Entity=U.S., Far East

Period=Q1 87

Types=Actual, Budgeted.

Or he could request:

Schedule=Income Statement

Entity=Corporate

Period=Q1 87, Q2 87

Type=Forecast.

This allows the user to work in a manner in which he is analyze data by using this four dimensional approach, no known other computer system allows for this "SEPT" method.

#### The General Flow of Operation of the Data Base Management System

The user enters the data base management system by typing the name of the system. As illustrated in Table I, a screen will appear which will provide (1) the date the user entered the system, (2) a copyright notice; (3) a menu of available operations, (4) a work area, (5) the system status, (6) an indication from which data base the computer system is reading, (7) the default drive, (8) the SEPT selections and (9) the amount of available memory. The last line (10) is a prompt line which describes the purpose of a highlighted menu or sub-menu item.

TABLE I

(1)	(2)	Corp. Class Software			(5)	READY		
May 20, 1987	copyright © 1986				NUM CAP			
(3) <u>CREATE</u>	INPUT	QUERY	ANALYZE	REPORT	TRANSFER	MAINTAIN	X-RUN	EXIT
(6)	(7)	(8)			(9)			
Database	Drive	Schedule Entity			Period	Type	Memory	
C: DEMO. DB	C	INCOME ACME			JAN 87	ACTUAL	178696	

Create define and modify input schedule, hierarchies, dictionaries & ranges.

(10)

The menu of available operations (3) lists the main functions of the computer system and highlights that one of them which is then available to the user. In Table I the lines above and below CREATE identify the highlighted function and the prompt line 10 describes the purpose of this function. The user selects a function by advancing the highlighter to that function by means of the cursor keys and confirms this selection by depressing an appropriate function select key such as the ENTER key. The system will then display a window on the screen containing a menu of subfunctions of the selected function, the first of which will also be highlighted. The user can then select a subfunction by advancing the highlighter through the menu of subfunctions. Upon selection of a subfunction, the system will then display a menu of further subfunctions and so on.

The operations set forth in the main menu of Table I are as follows.

The CREATE function allows the user to build templates, define and modify schedules, hierarchies, dictionaries, ranges, and certain system defaults.

The INPUT function allows the user to input data into a data base from electronic worksheets, computer files or a keyboard.

The QUERY function allows the user to extract information and create a report or a worksheet with the requested information.

The ANALYZE function allows the user to modify an existing query without redefining the entire query.

The REPORT function reformat a previously run query or model into print pages for viewing or printing.

This function also allows the user to design custom reports by extracting data from the data base.

The TRANSFER function allows the user to transfer data from one data base to another, to a file or to a diskette. For example, the user may wish to transfer all of his sales data to a file to be used in another computer system.

MAINTAIN allows the user to perform various data base management tasks such as creating, copying or restoring a data base and password protection. The system uses seven levels of passwords to ensure tight security. The levels of priority are:

1. System Administration
2. Management Control
3. Dictionary Maintenance
4. Data Transfer/Purge
5. Input Entry
6. Input Data
7. Inquiry

X-RUN allows the user to access other software packages without leaving the data base management system.

EXIT allows the user to log off. Two options are available: QUIT and BACKUP. BACKUP permits the

user to backup his data base before he logs off.

A "POP-UP" function is available throughout the operation of the system. This function is used to extract data and transfer it between files, validate syntax codes and view the contents of a specified data cell, schedule, range or dictionary.

The operation of the system of the present invention falls into three phases, namely set-up, production reporting and ad-hoc analysis. Each phase involves specific computer functions, but all functions are available for use even after set-up has been completed.

In the "set-up" phase, the user creates user passwords, enters data into system dictionaries, sets default periods and types, specifies printer configurations and configures the data base management system for input by creating input templates and defining hierarchies and ranges. This phase uses the CREATE and INPUT functions.

In the "production" phase, the user periodically inputs data into the computer system, converts and consolidates it as needed, and outputs the results to worksheets or reports for review and distribution. This phase uses the INPUT, QUERY, ANALYZE, REPORT, TRANSFER, MAINTAIN and X-RUN functions.

The "ad-hoc" analysis phase allows the user to review and create analytical models without the constraints of formal production reports. This phase uses the QUERY and ANALYZE functions.

The user interface for each of these phases is discussed in turn immediately hereafter. Following such discussion is a description of the implementation in software of the system of the present invention.

Every reference file begins with a pound sign (#) or double pound sign (##). These signs tell the worksheet program that the following characters are codes rather than cell entries. They also control how the codes apply on the worksheet.

A double pound sign (##) indicates that the codes and values that follow it apply globally across the worksheet. They continue to do so until another ## appears with different values for the same codes. The second set of values then replaces the first set in that the system will extract data from the source designated by the code after the double pound sign.

In column A of Table XV the first code ## S=I/S indicates that all schedule data in the top part of the reference file comes from the schedule identified by the code I/S. The second code ## S=B/S six rows below it then replaces the first; and all schedule data now comes from the schedule identified by the code B/S.

A single pound sign (#) indicates that the code and value that follow it apply to one row, column, or cell. It applies until another # and code is encountered. The new code and its value then replace the previous code and value.

In addition to pound signs the reference file extracts information based on a series of codes. Three types of codes are used in the reference file. The first type of code controls the direction in which other codes apply on the reference file. An "A" indicates that the codes which follow it run across the reference file. All codes not preceded by an "A" either run down the reference file or are global. The second type of code specifies what data to extract while creating an output file. For example, "B" is used to specify a type of Balance. The third type of code allows the user to format data. For example, the code "Z" allows the user to display a zero in a cell location for which an entity has not provided data.

The codes used are as follows. A (Across) indicates that the codes which follow it apply globally across the worksheet. Any codes and values not prefaced by "A" apply down the worksheet or globally. This code has no default value S (Schedule) extracts schedule data from the database. The value indicates the specific Schedule data. E (Entity) extracts Entity data from the database. P

database T (Type) (Period) extracts Period data from the extracts Type data from the database. R (Range Name) indicates a specific range name on a schedule. C (Cell Location) indicates a cell location on a schedule. The value gives the specific cell location of the data to extract. F (Factor) assigns a denomination to the reference file (i.e. mm=millions). B (Balance) assigns a balance to the reference file. The value indicates the type of balance. \$T (Currency Type) assigns a currency type to the reference file to convert extracted data. \$R (Currency Rate) assigns a currency rate to the reference file to convert extracted data. D (Decimals) sets the number of decimal places on the reference file. % (% Ownership) specifies percent ownership in an entity for calculation. > (Range Limit) indicates the limit of a code on the reference file. The value indicates the column or row and must be equal to or greater than the current column or row. Z (Zero) displays "0" in a reference file cell to signal missing entity data. 0 (Option) indicates if the codes should be included in the output file. The value indicates if the code is active. \* (Wild Card) accepts several values for Period, Type, or Entity and

creates an output file for each one from the one reference file.

Thus with reference to Table XV, the "A" in Line 1 indicates that the codes that follow it apply globally across the worksheet. Thus, for the specified Entities "E" the file will extract actual FY86 data.

Line 7 indicates that the following data will be extracted from Schedule I/S. Line 8 indicates that the reference file will extract from the database all data for the Range "SALES" from the I/S Schedule for ENTITIES ABC, ASC, FWS, CORP. Line 9 indicates that the file will extract from the data base and display on the worksheet all data from the Range "TOT OP-EXP" (Total Operating Expense) for ENTITIES ABC, ASC, FWS, CORP and so on. Line 13 indicates that the reference file now extracts data from schedule B/S.

Once the codes have been entered, the user may use the computer system's VALIDATE function to check for syntax errors. The validation function searches down and across the worksheet for syntax errors. After validation and error correction, the reference file may be linked to the computer system; and data may be extracted and loaded into the reference file. The user selects the LOAD option and enters the reference file name. The user then enters the output file name, illustratively the LOTUS 1-2-3 ® worksheet.

The computer system then loads the data into the worksheet by reading the reference codes, extracting the requested information from the data base, loading each cell in the worksheet one by one and then reading the next reference code. The process of reading the reference codes is continued until the system reaches the end of file record on the worksheet. While coding a reference file, the user may forget certain pieces of information. The present invention allows the user to review data from any point on the system by toggling between different software packages or by using the "POP-UP" utility program.

As part of the production phase, the user may also modify an existing query's values using the ANALYZE function available on the main menu. The user selects an existing Query and specifies the desired Period. The pre-defined period will be displayed. The user may modify the period by selecting a new period. The modification functions also apply to TYPE, ENTITY and SCHEDULE as long as these values are pre-defined ACROSS values. Table XVI is illustrative of the submenu which appear when the user selects the ANALYZE function.

The REPORT function allows the user to create customized reports and generate them individually or several at a time using a "batch mode". Once the report definition has been completed, the user can run a number of defined reports by creating a "batch" job. The user accesses the BATCH function which is a submenu under the REPORT function and selects the reference files to be used for extracting and displaying the data. The system verifies that the selected worksheets are available and are syntactically correct. Next the system will load the selected worksheets with data from the database. The system then performs an automatic recalculation of values according to the formulas resident on the worksheet. Lastly the reports are generated according to the report definition.

As part of the REPORT/FORMATTER capabilities, the user can generate a report for all entities that belong under a specific hierarchy. For example, the system can generate reports for each department of a



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(12) **United States Patent**  
Abrams et al.

(10) **Patent No.:** **US 6,675,350 B1**  
(45) **Date of Patent:** **Jan. 6, 2004**

(54) **SYSTEM FOR COLLECTING AND  
DISPLAYING SUMMARY INFORMATION  
FROM DISPARATE SOURCES**

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U.S.C. 154(b) by 0 days.

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715/513; 705/75; 705/21; 707/3; 707/4;  
707/104.1; 717/143; 717/165

(58) Field of Search ..... 707/501.1, 513;  
715/501.1, 513, 500.1; 705/75

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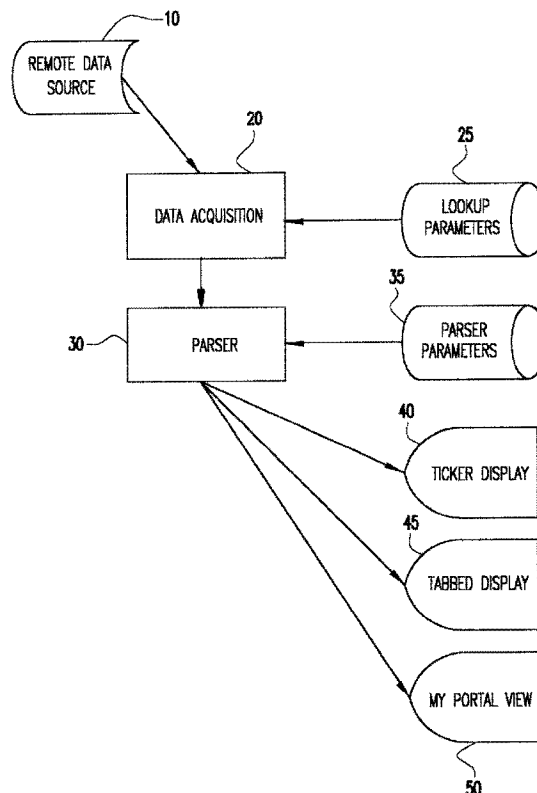
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(57) **ABSTRACT**

A system is described for collecting and displaying summary  
information from disparate sources. The system provides for  
user customization of data acquisition parameters for locat-  
ing articles to be summarized, user customization of param-  
eters for parsing the located source material so as to extract  
headlines, and user organization of extracted headlines into  
groups.

**30 Claims, 8 Drawing Sheets**





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The description of the invention is merely exemplary in nature and, thus, variations that do not depart from the gist of the invention are intended to be within the scope of the invention. Such variations are not to be regarded as a departure from the spirit and scope of the invention.

What is claimed is:

1. A computer-implemented method for providing congruent marketing data to a plurality of venue specific clients having different requirements for the data wherein the marketing data is first compiled into a centralized database from a plurality of disparate sources, comprising:

creating the centralized database for maintaining the marketing data;

compiling marketing data from the plurality of disparate data sources into the centralized database wherein the marketing data is compiled into the centralized database on a periodic basis;

creating a venue specific database for each venue specific client as a subset of data contained within the centralized database by extracting the subset of data from the centralized database based on the requirements for each client wherein the venue specific database is in a format specific to the venue specific client and the subset of data for each venue specific database is different; and providing access to the venue specific database through an interface module.

2. The method of claim 1 further comprising: validating the marketing data before it is compiled into the centralized database.

3. The method of claim 1 wherein the plurality of disparate data sources comprise internal data sources, external data sources and legacy systems.

4. The method of claim 1 wherein the format for the venue specific data comprises a markup language.

5. The method of claim 1 wherein the interface module is an application programming interface.

6. The method of claim 1 including determining the subset of data contained within the centralized database required for the venue specific database for each venue specific client and extracting each determined subset of data from the centralized database to create each venue specific database.

7. The method of claim 6 including distributing the venue specific database for at least one of the client specific venues to that client specific venue.

8. The method of claim 6 wherein at least one of the client venues uses an application programmers interface to create a venue specific application and uses this venue specific application to access the venue specific database created for that client venue.

9. The method of claim 6 wherein the determined subsets of data for the venue specific databases for at least two of the client specific venues are different.

10. The method of claim 1 including creating each venue specific database each time marketing data is added to the centralized database.

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11. The method of claim 1 including determining how frequently data from each of the disparate data sources is to be compiled into the centralized database and compiling data from each of the disparate data sources into the centralized database based on the determination of how frequently the data from each disparate data source is to be compiled into the centralized database.

12. A marketing system for providing venue specific data by integrating a plurality of data sources into a centralized database comprising:

a centralized marketing database for maintaining a compilation of marketing data wherein the centralized marketing database is created from a plurality of data sources;

a compilation module for compiling the marketing data into the centralized marketing database wherein the compilation module compiles the marketing data on a periodic basis;

an extract module for extracting a subset of the marketing data from the centralized marketing database for a plurality of clients for the data where each of the clients has different requirements for the data and wherein the extract a subset of the module extracts marketing data from the centralized marketing database based on the requirements for each client to create a venue specific database for each client where each venue specific database has a different subset of the marketing data specific to the requirements of a particular client of the data; and

a venue specific database comprising the subset of marketing data.

13. The marketing system of claim 12 further comprising: a validation module for validating the marketing data in the centralized database wherein the marketing data is validated when it is compiled into the centralized database.

14. The marketing system of claim 12 including a plurality of clients of the data, each of the clients having different requirements for the data, the extract module extracting a subset of the marketing data from the centralized marketing database based on the requirements for each client to create a venue specific database for each client where each venue specific database has a different subset of the marketing data.

15. The marketing system of claim 12 wherein the compilation module determines how frequently to compile data from each of the plurality of data sources into the centralized marketing database and compiling the data from each of the plurality of data sources into the centralized database based upon those determinations.

\* \* \* \* \*

(12) **United States Patent**  
**Warshavsky et al.**

(10) **Patent No.:** **US 6,732,095 B1**  
 (45) **Date of Patent:** **May 4, 2004**

(54) **METHOD AND APPARATUS FOR MAPPING BETWEEN XML AND RELATIONAL REPRESENTATIONS**

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 13 days.

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(22) Filed: **Apr. 13, 2001**

(51) **Int. Cl.**<sup>7</sup> ..... **G06F 17/30**

(52) **U.S. Cl.** ..... **707/5; 707/4**

(58) **Field of Search** ..... 707/1, 2, 3, 4, 707/10, 103, 202, 200, 104.1, 513, 100, 101; 709/203, 229

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*Primary Examiner*—Diane D. Mizrahi

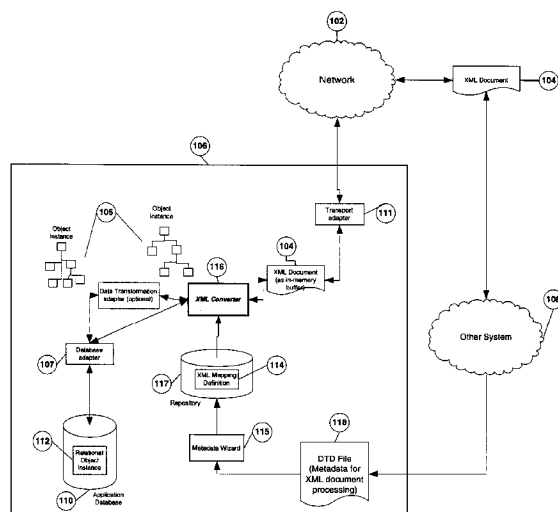
*Assistant Examiner*—Yicun Wu

(74) *Attorney, Agent, or Firm*—James W. Soong; Siebel Systems, Inc.

(57) **ABSTRACT**

A method to convert data between a relational format and an XML document, by creating a set of XML Mapping Definition from metadata; selecting relational data from a relational application database, and converting the relational data to the XML document using the set of XML Mapping Definition.

**19 Claims, 4 Drawing Sheets**



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13 <a href="#">7,219,343</a>	<a href="#">T Firmware update mechanism in a multi-node data processing system</a>
14 <a href="#">7,219,342</a>	<a href="#">T Software-to-hardware compiler</a>
15 <a href="#">7,219,339</a>	<a href="#">T Method and apparatus for parsing and generating configuration commands for network devices using a grammar-based framework</a>

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## Patents

Patents **1 - 100** on "at least a portion of said data". (0.05 seconds)

### Game machine **data** transfer system utilizing portable **data** units

US Pat. 5179517 - Filed Sep 22, 1988 - Bally Manufacturing Corporation

The system of claim 20 wherein **at least a portion of said data** stored in said data memory is in encrypted form and wherein said processor includes means for ...

### Automated voice system for improving agent efficiency and improving service to parties on hold

US Pat. 5309505 - Filed May 20, 1991 - Inventions, Inc.

said call and sending **at least a portion of said data** for said party to said available agent; (G) if said request for automated handling is not provided ...

### Apparatus for processing modified NTSC television signals, with digital signals buried therewithin

US Pat. 5461426 - Filed Aug 20, 1993 - Samsung Electronics Co., Ltd.

... thereby to generate a modified half-symbol count; a first framestore memory included in said comb filter addressed by **at least a portion of said data** ...

### Communications system using a central controller to control **at least** one network and agent system

US Pat. 5546452 - Filed Mar 2, 1995 - GeoTel Communications Corp.

... to said IVR control signals generated in said controller for causing said IVR to transmit **at least a portion of said data** to said workgroup. 71. ...

### Implantable device having an electrolytic storage electrode

US Pat. 5312439 - Filed Dec 12, 1991

... means provides electrical may be modulated or encoded, as is commonly known energy for the operation of **at least a portion of said data** within the art, ...

### Computer-based communication system and method using metadata defining a control-structure

US Pat. 6345288 - Filed May 15, 2000 - OneName Corporation

... when executed, creating metadata when executed, causing **at least a portion of said data** to be which associates said communications object with at least ...

### Device security system

US Pat. 5748084 - Filed Nov 18, 1996

... controlling elements of said laptop access to **at least a portion of said data** files. computer to secure data stored therein, wherein said beacon 4. ...

### Document verification system

US Pat. 5475205 - Filed Jun 22, 1994 - Scientific Games Inc.

The system of claim 27 wherein said central computer additionally includes means for converting **at least a portion of said data** signal into said document ...

### Package for card with **data**-encoded strip and method **of** using same

US Pat. 5918909 - Filed Jul 16, 1997 - Barry Fiala, Inc.

... said first card being secured to said first panel so that **at least a portion of said data**-encoded strip is exposed and displaced remote from a portion ...

### System, method, and computer program product for creating subnotes linked to portions **of data** ...

US Pat. 6704730 - Filed Feb 5, 2001 - Avamar Technologies, Inc.

**at least a portion of said data** file. 9. The computing environment of claim 1 wherein said , , , .. c . , , , , list comprises a physically distributed ...

Apparatus for detecting human physiological and contextual information

US Pat. 7020508 - Filed Aug 22, 2002 - BodyMedia, Inc.

... said processing unit being adapted to generate 20 at least one of: (i) derived data from **at least a portion of said data** indicative of physiological ...

Endoscopic smart probe and method

US Pat. 6984205 - Filed Mar 8, 2002

... a digital processor having at least one algorithm running thereon adapted to process **at least a portion of said data** 5 of said second form; ...

Data recovery using targeted ECC correction

US Pat. 6084734 - Filed Dec 8, 1997 - Maxtor Corporation

The apparatus of claim 1, further comprising: means for realigning **at least a portion of said data** signal to a predetermined byte format when said ...

Method of and apparatus for generating a tree data structure supporting longest match lookup

US Pat. 6490592 - Filed Dec 30, 1999 - Nortel Networks Limited

... portion which defines the number 45 of bits in said prefix, **at least a portion of said data** structure being arranged substantially as a balanced tree; ...



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